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LECTURE I.

Delivered on March 25th, 1924.

THE subject which I wish to bring to your notice is lacking in general interest and by many regarded as threadbare, but although much has been written on the subject of the wasting disorders of childhood, its problems are far from being completely solved, and the death-rate from these disorders remains very high. Dr. Goulston, in bequeathing by his will £200 to the College of Physicians to purchase a rent charge for the maintenance of an annual lecture stipulated, amongst other conditions, that if possible a dead body should be procured, and in the deed conveying the rent charge to the College it is stated that the dead body should be dissected as the President and Elects should think necessary for the diseases to be treated of. Unfortunately there would be little difficulty in procuring the dead body of a child who had suffered from a wasting disorder, but in the majority of the cases which I wish to discuss the dissection of the body would yield very little information about the diseases treated of.

The group of wasting disorders which I have studied is made up of those cases which, when seen by the physician, frequently prompt the question: "Is this patient suffering from pyloric stenosis"? The clinical picture is that of a wasted infant whose age can be measured in weeks rather than in months, and whose history is that, although normal at birth, the baby has later failed to put on weight normally; it has wasted, and probably has suffered from vomiting, and in many cases also from constipation or diarrhœa. As far as possible I have limited my investigations to infants under three months, but some have been made upon infants up to six months of age. The period of life chosen is that of *la première enfance* of French writers, and almost exactly corresponds with the age-incidence of the cases of athrepsia described by Parrot.

The subject naturally divides itself into two main subdivisions—simple atrophy or marasmus, and infantile pyloric stenosis—although it has not been found advantageous, particularly in chemical investigations, rigidly to separate the consideration of the two groups.

SIMPLE ATROPHY OR MARASMUS.

I will deal first with simple (or infantile) atrophy or marasmus (athrepsia, severe infantile malnutrition, advanced nutritional disorders of infancy, &c.). On clinical grounds only it is quite impossible to say at what point in its downward course a wasting infant becomes an atrophic one. Talbot[1] has shown that there is no appreciable change in the metabolism of these infants until there is a loss of 20 per cent. of the body-weight. I have therefore adopted as a working rule that an infant can be regarded as suffering from simple atrophy if the body-weight is less than 80 per cent. of the expected body-weight for its age, and if there is no other evidence of disease. To come to any conclusions as to the cause of atrophy it is essential to review at considerable length the literature on the subject; to examine carefully both the theories put forward and the criticisms of them, and in some instances to attempt to prove or disprove some of the experimental data on which these theories are based.

Literature.

In this review of the literature I have briefly indicated the view held by older writers. The honour, if it be such, of introducing the term marasmus into medicine is given to Soranio, a physician of Aragon, who, writing on this subject in the year 1600, states that the expression "infantile atrophy" was used in Greek medicine. A few years previously (1583) Hieronymus Mercurialis, an Italian physician, and a teacher in the schools of Padua and Bologna, published a treatise, "De Morbis Puerorum," in which, according to Marfan,[2] infantile atrophy is described under the term Macies, and the statement made that the condition was called by the Greeks *ἰσχνοτης*, *λεπτοτης*, and by the Romans macies, macilentia, gracilitas, tenuitas, macritudo.

The earliest reference to this disorder by any English writer that I have been able to find is in a small book published a few years after the Goulstonian lectures were founded. This book bears the title:—

> "A Treatise of the Diseases of Children with their Causes, Signs, Prognosticks and Cures, for the benefit of such as do not understand the Latine Tongue, and very useful for all such as are Householders and have Children. By Robert Pemell, Practitioner in Physick at Cranebrooke in Kent May the 29 1653."

The book contains a chapter headed Of the Consumption or Leaness of the Rickets. Pemell dismisses the "leaness of the rickets" by saying that a full description of it has recently been published by three London doctors, but he deals at greater length with the consumption; thus he says:—

> "Children do many times wax lean without any manifest cause, and although they suck much or feed well yet they are not therewith nourished. Now the causes are many; as the corruption of the milk for being either too hot or too cold, it turns into ill humours and so hinders the breeding of good blood; or it may come for want of suck, from whence we see many times that when a child consumes and pines away with sucking one nurse, if it sucks another it soon thrives and grows . . . If the child consume for want of milk or a good nurse this may be cured by getting a better nurse . . . The consumption in most children is dangerous if it be not taken in time and kills many." His treatment is refreshingly simple. "If the fault be in the milk that must be rectified by good dyet of the Nurse, or if that do not help, then the Nurse is to be changed."

A few years later (1659) appeared "De Morbis Puerorum" by James Primrose. This book contained a description of infantile atrophy under the heading Macies, and some of the statements contained therein suggest that he was not unfamiliar with Pemell's book. Another book of about the same period, on the Diseases of Children, was "habited in English," as the author puts it, at "Oundle in Northamptonshire" in June, 1662. I cannot give the author's name, because in the only copy I have seen the title-page of the book is missing, and in a dedicatory letter to Sir Robert Boyle the writer signs only his initials "J. S." Under the heading Of the Consumption, he says, "A consumption is called leaness, gracility and tenuity." He describes various conditions, but one of them is undoubtedly marasmus, thus:—

> "In children it is caused for the most part by the defect of nourishment, being either too little or vitious, and unuseful, proceeding from the fault of the milk." He suggests other ætiological factors—e.g., "It is also conceived that children by reason of the softness and tenderness of their body, grow lean and consume by fascination, proceeding from their touching unhealthy bodies, or the unwholesome vapours out of the eyes or mouthes of women not well, which truly is not fascination, for witchcraft is rather the work of the devil than by any power of the sages."

He gives Mercurialis and Primrose in his list of authorities, and the above quotation savours as much of Primrose as some of Primrose's statements savour of Pemell.

Eighteenth-Century Conceptions.

In 1689 Walter Harris published his book, "De Morbis Acutis Infantum." Harris was Lumleian lecturer from 1710 until his death in 1732, and his book appears to have become the standard work on children's disease in this country for many years, the last edition being part of Martyn's "A Full View of all the Diseases of Children," published in 1742. I have been unable to find any reference to marasmus in this work, although he describes a condition which he calls "atrophia verminosa."

A very good description of infantile atrophy is given by Dr. John Astruc in his "Treatise on all the Diseases Incident to Children," published in England in 1746. The chapter in which he describes the condition is headed, Of the Extenuation or Decay of Children. About a hundred years after Harris wrote his book, Michael Underwood published his "Treatise on the Diseases of Children." This book ran through many editions from 1784 to 1827, and succeeded that of Harris as the standard text-book. Like many other authors of this period Underwood confused tuberculous peritonitis with marasmus. When writing of "a confirmed hectic fever and marasmus, or a wasting of the whole body, called by some writers atrophia lactentium," he describes enlargement and suppuration of the mesenteric glands, but he clearly recognises the condition thus:

> "There is indeed an atrophy or universal decay in infants for want of the breast, or from the unsuitableness of it (which is the true atrophia lactentium), or of whatever else may be the child's ordinary food, but this is not usually attended with fever. . . . Harris recounts some remarkable recoveries in what he calls the atrophia verminosa (or worm hectic), . . . but I have seen none so marvellous as in the atrophic dententium or tooth atrophy."

In another passage he states that macies of ancient writers is "a true atrophy or marasmus."

In 1830 Dr. John Darwell, physician to the General Hospital, Birmingham, wrote a small book having the title "Plain Instructions for the Management of Infants with Practical Observations on the Disorders Incident to Children." In an article on Marasmus he says:—

> "This term which in its original significance meant nothing more than emaciation we now understand as a general expression for infantile fever. It is almost always the consequence of improper diet or regimen, or is a sequela of the exanthematous diseases."

He then proceeds to give post-mortem findings, which are those of tuberculous peritonitis and general tuberculosis. This may be taken as representing general opinion in this country, until Dr. Charles West's "Lectures on the Diseases of Infancy and Childhood," first published in book form in 1848. In these lectures Dr. West clearly differentiates infantile atrophy as a nutritional disorder, although stating that it may occur in a child who is weakened by previous disease or the subject of general tuberculous disease. He shows how insufficient and unsuitable food produces the condition.

> "Death takes place from starvation; its approach indeed having been slower, but the suffering which preceded it not therefore less, than if all food had been withheld."

In his book on the "Wasting Diseases of Children," first edition published 1868, under the heading of Simple Atrophy, Eustace Smith also well describes the clinical picture and obviously regards the condition as a "vice of nutrition." The same view of some cases was, of course, taken by Parrot in 1875.

The frequent occurrence of diarrhœa and vomiting in these children naturally led to a great deal of attention being paid to the alimentary canal, and attempts were made to classify wasting disorders on a basis of morbid anatomy. In 1879 Bouchut[3] criticised his fellow countryman Parrot very adversely for introducing the new name "athrepsia" into science, and stated categorically "athrepsia is enterocolitis." There is little reference to atrophy and marasmus in many text-books of diseases of children published about this time. Indeed, in some these terms do not appear, but many pages are devoted to acute and chronic gastritis, enteritis, gastro-enteritis, &c. The morbid anatomy theory reached its zenith in the Vienna School under Wiederhofer in 1880, and in Germany under Baginsky in 1884. The theory, however, failed when it was found that there were not any constant lesions, and that many of the appearances found were due to post-mortem changes. The unsatisfying nature of post-mortem examinations is well known to all who have performed autopsies in these cases.

A little later, in 1885, Escherich, in Vienna, investigated the bacteriology of the intestine and its contents under normal and pathological conditions. Although a bacteriological explanation of atrophy was not given, an explanation of the often associated diarrhœa was advanced, and he established the fact that the type of bacteria in the intestine depended on the kind of food given. From this time until the beginning of the twentieth century, most pediatrists seem to have halted between Charles West's and Eustace Smith's view that atrophy was due to starvation, and the view that there were morbid changes in the alimentary tract, which were the cause of atrophy. Not a few indeed seem to have tried to hold both views at the same time. Eustace Smith regarded the starvation as due to insufficient food, and also to unsuitable food, and he thought that difficulty in digesting protein was the cause of atrophy occurring in children who were fed on cow's milk. This doctrine of the harmfulness of protein of cow's milk, first enunciated by Biedert in 1869, had a considerable vogue, and, indeed, until recent times the presence of curds in the stools was regarded as due to undigested protein. This theory was never seriously challenged until the researches of Czerny and his colleagues.

The Work of Czerny.

Since the beginning of the present century a great amount of research work on nutritional disorders has been carried out by German workers, particularly by Czerny and by Finkelstein. According to Czerny[4] atrophy is not a disease per se but a disturbance in growth and in general nutrition, which is the result of nutritional disturbances, or of infective processes or both. As a result of these conditions infants do not invariably become atrophic; the reason some become atrophic and others do not is due to a constitutional anomaly. Children who do become atrophic are either suffering from the "exudative diathesis," or are the children of "neuropathic and psychopathic parents," and show extreme nervous irritability of the intestinal tract, or are children with the "hydriopic" constitution—i.e., children who show differences in salt and water retention from normal children.

Czerny's classification is as follows:—

1. Disturbances from food: (*a*) Milchnährschaden; (*b*) mehlnährschaden; (*c*) infantile scurvy.
2. Disturbances from infectious processes: (*a*) Acute disturbances; (*b*) enteral infections; (*c*) parenteral infections.
3. Disturbances from constitutional anomalies: (*a*) Exudative diathesis; (*b*) rickets; (*c*) anæmia; (*d*) neuropathic constitution.
4. Disturbances produced by congenital malformation.

The two important food disturbances which concern us are what he describes as Milchnährschaden and Mehlnährschaden.

Milchnährschaden.—This disturbance is due to over-feeding with milk, and the particular factor causing the injury is the fat in the milk; it therefore may be called Fettnährschaden. The clinical characteristics of this over-feeding with fat are failure to gain weight, constipation, with passage of pale dry crumbly soap stools, pallor, and flabbiness. Czerny's[4] view in 1912, five years after the appearance of his text book on infant nutrition, was expressed as follows:—

> "At the present time only so much can be said in regard to the food components, that it is the fat that must be restricted in the treatment of atrophy, and that the place of this must be taken by carbohydrates."

He did not believe in the use of cream in infant feeding.

Mehlnährschaden.—This disturbance is due to feeding on a diet containing too much carbohydrate (frequently starch). Such a diet not infrequently is deficient in fat and protein—e.g., a weak sweetened condensed milk mixture. The baby is markedly wasted; the stools are often frequent, usually acid, green, and watery, with a variable amount of mucus and small whitish curd masses. Occasionally the wasting is masked by œdema (hypertrophic form).

Protein, according to Czerny, never causes any upset; he does not admit any such thing as "protein injury." The curds found in infants' stools are nearly always fat and very rarely protein curds, and the factor in the production of atrophy is the difficulty in dealing with fat. He assumes that these children have a low assimilative power for fat, and as a result of fermentation and digestion fatty acids are formed in excess in the intestinal tract. To neutralise these fatty acids, alkalies are taken from the tissues and excreted into the intestine and lost in the stool. In constipation with soap stools, calcium, and in diarrhœa, potassium and sodium are thus excreted. Demineralisation of the body is the essential cause of atrophy.

"On account of this mineral loss it is assumed that the cell structure and tissue composition is altered, and that if a sufficient loss takes place, the normal cell function will be so disturbed that the building up of new tissue is impossible, even if the processes in the intestinal tract are restored to normal."[3]

This theory was based on results obtained by Keller and Steinitz. Keller[6] in 1897 found a considerable increase in the urinary ammonia in 10 out of 11 infants suffering from acute and chronic gastro-intestinal disturbances, and in 1903 Steinitz[7] found that the urinary ammonia was increased by giving a large amount of fat in the food, at the same time there was an increased loss of alkali by the intestine, and a corresponding diminished loss in the urine. Both this experimental work and Czerny's theory have been criticised considerably, and the conclusions refuted by Pfaundler,[8] Meyer and Langstein,[9] and Utheim.[5]

The latter observer found that, although there is a high excretion of ammonia in the urine, it is proportionate to the amount of organic acids in the urine, which acids she found occurred in atrophic infants, and infants suffering from acute diarrhœa. With a great increase in the fat of the diet there is, however, only a small increase in the excretion of organic acid and ammonia, and she assumes that the source of the organic acids is a disordered metabolism of the body cells.

Observations made by Miss Hickmans and myself, to which I refer later, agree with those of Utheim, that increase in the amount of fat in the diet produces little increase in the ammonia, and also agree with Holt, Courtney and Fales,[10] and with Hutchison,[11] that many atrophic infants do not have a low assimilative power for fat. Czerny's work was, however, of the very greatest importance because, for the first time, he emphasised the importance of the consideration of the baby as a whole, and not simply of his food or his alimentary canal. The other great advance made by him was the demonstration of the harmlessness of protein.

The Work of Finkelstein.

Finkelstein published a classification of nutritional disorders in his text-book in 1912, which has had a considerable vogue on the Continent and in America, and has been adopted to some extent in this country (John Thomson, Dingwall-Fordyce). As will be seen it is largely a clinical classification. With Czerny, fat was the factor, but according to Finkelstein the sugar and salts are to blame. He based this view largely on the whey exchange experiments of Meyer.[12] In these experiments Meyer showed that when curd of cows' milk was mixed with whey of human milk the mixture was well tolerated, whereas when curd of human milk was mixed with whey of cows' milk the mixture was badly tolerated. These experiments, which were only few in number, have been repeated and disproved by Lichtenstein and Lindberg.[13]

According to Finkelstein the whey salts may injure the intestinal mucosa and interfere with its activity by decreasing the normal secretion, depressing the antibacterial function of the cells, and thus allowing the growth of bacteria which produce sugar fermentation. The injured mucous membrane allows the passage of harmful substances, lactose and salts into the circulation, and is itself liable to bacterial infection. The somewhat zigzag character of the weight chart in bottle-fed babies he regarded as due to variations in the salt content of the whey. He found[2a] that the giving of 100 c.cm. of 12·5 per cent. lactose solutions to infants with intestinal disorders produced fever and nutritional disturbances. Other sugar and salts produced the same results, as also did lactose and salt when given intravenously. He also found that the giving of tea, or even water alone, caused the fever to disappear entirely. The fever that occurs in alimentary intoxication he regards therefore as "salt" and "sugar fever," and in his opinion it is due to injury to cells by the physico-chemical effect of the sugar or salt. In his view, the rapid loss of weight in atrophy can only be explained by a pathological loss of water. He assumes that the water combining power of the different cells of the body has been lost, and that as the result of the lack of retention of water there is a lack of retention of nitrogen and alkali.

Balcar, Sansum, and Woodyatt,[14] in examining Finkelstein's results, point out that the solutions used by him were strongly hypertonic, and quote their own experiments, which show that hypertonic solutions of crystalloids, which do not burn in the body (sodium chloride, sodium bicarbonate solutions were used), cause fever, diuresis, and dehydration, whilst isotonic solutions do not cause any of these symptoms. These observers showed that when sugar was injected intravenously, sufficiently in excess of the tolerance limit to produce marked glycosuria and diuresis, and when the rate of water administration was less than the rate of diuresis, for a period long enough to cause the loss of a certain weight by dehydration, fever was produced. They also found, as Finkelstein did, that the fever subsided when additional water was given. They point out that in cases where lactose was used every gram of lactose was recoverable unchanged from the urine, and they conclude that "sugar and salt fever" in infants is caused by dehydration and does not arise from injuries to cells.

In pursuance of his view, that the whey salts and sugar fermentation are the factors in nutritional disturbances, Finkelstein devised a special milk modification to combat this fermentation. This modification is the well known protein milk, which has a high protein, but a low sugar content. Like Czerny he also stressed the importance of the baby: "It is the sick baby we have to study, not the diseased bowel." His classification is based on the study of the weight chart.

Bilanzstörung.—In Bilanzstörung (disturbance of balance—failure to gain) the previously normal chart with a steady rise is replaced by one showing a straight line. This is the type of case described by Czerny as Milchnährschaden; in it there is diminished tolerance for fat, due, according to Finkelstein, to derangement of the relations of metabolism of carbohydrates to the fat. He aims at bringing about the normal fermentation in the bowel and the production of acid instead of alkaline soapy stools. He does so by reducing the amount of milk and adding cane sugar, maltose or starch.

Dyspepsia.—The weight curve turns slowly downwards, but there is no great loss of weight; it is the milder form of sugar fermentation, the commencement of diminished tolerance for carbohydrate. The

children are fretful, and there may be slight attacks of diarrhœa. Less fermentable carbohydrates, like dextrimaltose, may be tolerated, but in the worst cases Finkelstein advised using his protein milk. If this condition does not improve the infant passes into one of the two following categories, which of the two may depend on the food; if the food contains much sugar and little fat, the tendency is to intoxication; if little sugar and more or less plentiful fat, the tendency is towards decomposition.

Alimentary Decomposition.—The weight chart shows a slow, steady fall, the condition being that of marasmus or atrophy.

Alimentary Intoxication.—Here the fall is rapid and accompanied by considerable diarrhœa, an irregular temperature, respiratory and cerebral disturbance; in its worst form this is cholerine, or cholera infantum. The condition is not due to a bacterial infection, but due, as previously stated, to the passage of whey salts through the unhealthy mucous membrane into the general circulation.

Recent Work in Britain and America.

Within recent years a great amount of work on metabolism in atrophic infants and the pathogenesis of infantile atrophy has been carried out in America. I would mention particularly L. E. Holt * and his co-workers, Marriott, Utheim, Morse, Talbot, &c. Important contributions have also been made by the Glasgow school, in particular by Fleming, Hutchison, Guy, and Telfer.

According to Marriott,[15] atrophy is essentially the result of partial starvation, continued for long periods of time. There is a negative mineral salt balance, and in fully developed cases of atrophy there may also be a negative nitrogen balance, showing that there is destruction of the body tissues.

"There is diminished functional capacity of the body to oxidise organic material, and the basal energy metabolism of athreptic infants is often high as compared with those who are normal. The destruction of body substance is not confined to the solid portions of the organism, but affects the blood as well. There is a diminution in blood protein, a destruction of blood corpuscles, and a decrease in the total blood volume, resulting in a diminished blood flow, which brings about a lowering of the functional capacity of all parts of the body. When the blood flow is increased there is a return of normal function."

The well-known clinical fact, that atrophic infants may have a stationary weight for a long period, despite a fairly large intake of fluid, is probably due to this being a "period of repair," during which the functional capacity of the body for utilising food is returning. From animal experiments it would appear that the restoration of blood volume is occurring during this period.

Marriott believes that one of the chief reasons why atrophy develops on cow's milk feeding, and not on breast milk, lies in the different buffer values of the two milks. There is little difference between their acidity value. According to Clark and Lubs,[16] pH for human milk is 7·0 to 7·2, and for cow's milk 6·6 to 6·8, but the alkali reserve (buffer value) of cow's milk is much greater, for it takes three to six times the amount of added decinormal hydrochloric acid to bring cow's milk up to the same acidity as breast milk, to which a certain quantity of decinormal hydrochloric acid has been added. The buffer value of cow's milk may be lowered by diluting with water, adding carbohydrate, or by artificially souring the milk by lactic acid organisms, or by the addition of hydrochloric acid. Protein milk also has a lower buffer value. Marriott's classification is as follows:—

Acute conditions: (1) Acute diarrhœa; (2) anhydræmia.
Chronic conditions: (1) Hypothrepsia; (2) athrepsia.

* It is with very great regret that I have read of the recent death of Dr. Holt in China. His name and work are freely quoted in these lectures, and I would like to express my admiration of him and of the quality of his work. He was, indeed, one of the greatest pædiatricians in the world and in common with his own countrymen we shall miss him sorely.

In a comprehensive series of papers on infantile atrophy, Nobécourt[17] introduces a simple classification. He recognises two clinical syndromes, hypotrophy and cachexia. Each of the two syndromes is subdivided into (1) essential or protopathic, and (2) secondary or symptomatic. The ætiological factors in his essential group are the health of the mother during pregnancy, her previous medical history and habits, position in social scale, &c., and also what Czerny has described as the constitutional factor; the ætiological factors of his symptomatic group are the infections, vomiting, gastro-intestinal infections, and defective feeding. This last factor includes unsatisfactory food, under-feeding, and over-feeding. Marfan [3] also adopts a similar simple classification. He divides infantile atrophy into hypothrepsia and athrepsia, and says that the cause of these conditions can be classified under three heads: (1) defective food; (2) affections of the digestive tract; and (3) infections. At the present time, general opinion seems to be divided between the views of those who, like Nobécourt and Marfan, adopt a simple clinical classification, and the views of Finkelstein and Czerny, with the adoption of Finkelstein's classification rather than Czerny's.

I think it is a fair statement to make that the larger body of opinion favours the views of the former group. The experimental evidence on which many of Finkelstein's and Czerny's views have been based have, as stated previously, been seriously challenged. Actually in practice many of the cases met with cannot, in my opinion, be classified into Czerny's groups, although carbohydrate indigestion not infrequently presents symptoms similar to those described by him under the heading of Mehlnährschaden. It is quite true that, using the weight chart as a basis of classification, it can be divided up as Finkelstein has shown, but the associated clinical characteristics described by him do not always manifest themselves.

There can be no doubt, I think, that carbohydrate and fat "intolerance" or indigestion do occur, and that such groups can be separated at times, but they are not a sufficient explanation of all the simple atrophies of infancy. I think, also, that a case, whilst still atrophic, may show carbohydrate indigestion at one time and fat indigestion at another, or even a combination of both.

I hesitate to add another to the already long list of classifications, and a sentence from a recent review on one of the leading text-books of children's diseases comes forcibly to my memory:—

"Disease of the gastro-intestinal tract is an open field; his classification will not please many more people than the author."

Personal Classification.—My classification is not very different from some of those I have quoted, but it has enabled me to label my cases. I do not differentiate between degrees of atrophy, because there can be no strict dividing line between moderate and severe atrophy, but before a child is considered atrophic it must be more than 20 per cent. under the expected weight for a child of that age.

1. Simple atrophy.
2. Simple atrophy with dyspepsia: (*a*) diarrhœa and vomiting; (*b*) fat indigestion; (*c*) carbohydrate indigestion; (*d*) protein indigestion; (*e*) pylorospasm.
3. Simple atrophy from deprivation (avitamoses): (1) absence of fat (dystrophia alipogenetica), frequently also associated with excess of carbohydrate (dystrophia amylogenetica) and often insufficient protein; (2) absence of antiscorbutic and antineuritic vitamins.
4. Atrophy associated with other diseases or infections. Pyloric stenosis and other deformities. Pyelitis, otitis media, syphilis, tubercle, broncho-pneumonia, acute epidemic diarrhœa, &c.

Ætiology.

To an even greater degree than rheumatism or tuberculosis infantile atrophy is a "social disease," and cases seen in hospital practice far outnumber those seen in private practice. This is, of course, a widely recognised fact, but it is very well demonstrated by consideration of the geographical distri-

bution of fatal cases throughout the city of Birmingham. This city has a configuration not unlike that of Ireland, and the municipal wards can be divided into three groups: a central group, most densely populated and containing the largest number of slums and back-to-back houses, an outer group of wards which comprises the outlying suburbs, the least densely populated part of the city, and having many large open spaces, and a middle group of wards intermediate in type. In the years 1912–16 the infantile mortality-rate for "atrophy, debility and marasmus" for the whole city was 16·88 per 1000 births; the rate for the central group of wards was two and a half times the rate for the outer groups, the figure being 25·57 and 10·05 respectively, whilst for the middle groups of wards it was 13·72 per 1000 births. The heading "atrophy, debility, and marasmus" probably includes cases that should not be included under these headings; nevertheless, the figures do give a very good idea of the distribution of infantile atrophy, and show that where poverty and squalor exist atrophy is much more common than where children are brought up under better conditions. In general, the ætiological factors concerned in the prevention of atrophy are well known, but to enable my cases to be compared with those of other writers I have analysed these factors in 100 cases, under the age of 6 months, admitted into the municipal infants' hospital during the period 1920–24.

Prenatal Factors.—Only eight of the mothers had followed any occupation other than that of housework during the period of pregnancy. Thirty-two, however, gave a history of previous ill-health, 11 were said to have suffered from "anæmia," and four from "debility," four from "rheumatism," two from pulmonary tuberculosis, two from bronchitis, three from "fits," and one each from heart disease, kidney disease, sarcoma, uterine hæmorrhage, abscess of uterus, and vaginal discharge. One mother died from tuberculous meningitis 14 days after the birth of the baby. Of the fathers, five gave a history of pulmonary tuberculosis, and one of mental disease. In the family history of the patient there had been in five families deaths from marasmus; in five families deaths from "fits"; stillbirths had also occurred in five families and miscarriages in 11. Of the babies 12 were twins; in most cases both twins were admitted to hospital; in other cases one twin was atrophic and the other a normal child, although fed in the same manner. One child of triplets was admitted; three only were illegitimate children. The place in the family is an interesting point; 68 per cent. of the cases were either first, second, or third in the family, the figures for each year being practically identical.

Feeding.—Two cases only had been fed entirely on the breast, but a considerable portion had been partially breast-fed. The number of completely artificially fed babies was 19. In the cases where artificial feeding had been given either throughout life, or to supplement or replace the breast, 34 had been fed on one artificial food only, 30 on two, and 21 on three different foods. Smaller numbers only had received more than three different forms. Further analysis of the feeding presents other points of interest. The choice of type of food in children fed on one and two forms of artificial food are here tabulated:—

	One food.	Two foods.		One food.	Two foods.
Cow's milk ..	20	27	Nestlé's ..	1	11
Glaxo	8	12	Cow and Gate	1	7
Trufood	2	4	Various ..	—	6
Allenburys ..	2	3			

From the literature it would appear that machine-skimmed sweetened condensed milk is a much more important ætiological factor in the United States and on the Continent than in Birmingham, but in estimating the value of the preceding tables it should be noted that in nearly every case the infant was sent into hospital from an infant welfare centre, and that, therefore, cow's milk and the dried milks are more likely to have been used than if the parents of the children had not sought advice.

A history of diarrhœa was given in 19 cases, and of vomiting in 72, in 54 of which vomiting was said to have been of frequent occurrence; constipation occurred in 46 cases. After admission vomiting occurred in 40 cases, and diarrhœa in 27 cases; a larger number than this, however, suffered from looseness of the bowels.

THE METABOLISM OF FATS IN INFANTILE ATROPHY AND FAT INDIGESTION.

The obvious loss of fat by atrophic children, the description of Milchnährschaden by Czerny and his colleagues and their insistence on the importance of "fat injury," have led to much research on the digestion and absorption of fats in these children. Amongst the most important contributions to the subject of fat metabolism in infants I would again mention Hutchison working at Glasgow, Holt, Courtney and Fales at New York, and Utheim at St. Louis. The suggestion has been made within the last year or two that fat digestion in pyloric stenosis is defective.[18] This point has been discussed and disproved in a recent paper by Barling and myself.[19] I do not know of any observations on fat absorption in pyloric stenosis, but if Marriott's view that "athrepsia is essentially starvation" be correct, then metabolism experiments should yield similar results in atrophy and in pyloric stenosis, in which the wasting is unquestionably due to starvation.

This consideration—together with the fact that the work of these investigators would be even more valuable if confirmatory results could be obtained by what I think are more rigid methods—determined me to carry out a series of metabolism experiments. Utheim [5] examined the fat absorption in 13 atrophic infants on 20 different occasions. In 11 of the experiments the period for which the case remained under observation was five days. In four experiments the period was four days. In the other five experiments the period was two days or less. It is better, I think, to delete these five experiments in arriving at the final result. She does not say how the fat intake was estimated.

Hutchison,[11] likewise, does not give any information as to how the fat intake was estimated, nor does he say if the figures obtained were from one 24-hour specimen nor whether the experiment was carried out over a period of days. He examined 22 normal and 22 athreptic infants; the ages of the children are not stated. The most extensive series of experiments, however, are those by Holt, Courtney, and Fales.[10] They examined breast- and artificially-fed children. In the series of children fed on modifications of cow's milk, 128 specimens of fæces were examined from 77 infants, whose ages ranged from 2 to 18 months; 53 of these cases were infants under the age of 6 months, and therefore more strictly comparable with my series. Except for the cases having diarrhœa at the time of the experiments, the greater number were not ill, although the digestion of some was not normal and some subsequently developed diarrhœa. None of my cases at the time of observation was suffering from severe diarrhœa, and therefore I propose to eliminate that group of cases, when comparing them with my own. The actual figures obtained by these workers I will give later on. In three quarters of the cases the stools examined were collected for a definite period; the actual length of time is not stated, but in a letter sent to Findlay, Paton, and Sharpe [20] Holt says:

> "In most of the cases the values reported are averages for two or three days, frequently for longer periods. The values for infants are mostly for three and four day periods..."

In fat metabolism experiments it would seem advisable as far as possible that the following conditions should be observed: (1) That the actual fat intake of the food should be known; (2) that the stools examined should be those resulting from this food; (3) That the stools should be examined for a considerable period, at least five days.

The time occupied by food passing through the alimentary canal in infants is variable; it varies to some extent with the character of the food; it obviously varies according to the presence of diarrhœa or constipation, but it also probably varies with the condition of the child, for it has been shown by test meals that in some cases of atrophy the stomach empties very rapidly. Variot [24] quotes Chahnet's observations that in children under 1 month carmine given with the food appears in the stools in less than two and a half hours, and is present in the stool up to eight hours after ingestion; and that in a child of 2 years, fed on sterilised milk, the periods are four and nine hours respectively. That these figures cannot be relied upon for metabolism purposes is proved by observing the time taken for barium to traverse the intestinal tract. In a series of cases of atrophic infants in which this has been done (Dr. C. G. Teall), the time required for the elimination of all the barium from the intestinal tract has varied from eight hours to three days. To make quite certain that the stool examined is one from a known fat intake, the fat in the food is estimated for three days before estimation of fat content of stool is undertaken. The method which I have adopted, and this method is used in all metabolism experiments, whether fat, protein, calcium, &c., is as follows:—

The experiment lasts over a period of eight days, during which period the feed is unchanged. For the first five or six days the fat intake is estimated every 24 hours. To do this, half an ounce of every feed is set aside during each period of 24 hours, and the actual amount taken at a feed is noted. At the end of the third 24 hours, the child is put on a metabolism bed for five days, during this time the whole of the stools (and in many cases the urine also) is collected, and each 24 hours collection of stool is dried and the fat estimated. The mean of all the 24 hours estimations of fat content of the feeds is taken as the fat intake; and the mean of the stool estimations as the fat output.

This method, I think, fulfils the essentials I have laid down. The chemical investigations have all been carried out for me in the biochemical department of the Children's Hospital by Miss E. M. Hickmans, M.Sc. Birm., to whom I am very greatly indebted.

There are probably many criticisms that can be made of our results, but two obvious ones can be met. The first is that drying the stools may alter the total fat, or the distribution of the fat in the stools. Holt, Courtney, and Fales, however, showed in their work, that, although the soap content of the acid stools of breast-fed infants is increased by drying, nevertheless in the stools of children fed on cow's milk, neither the total fat nor the distribution of the fat was affected. They, however, say that this distinction may not hold good in the case of acid diarrhœal stools, but such stools were not included in my series of cases.

The second criticism is that fæcal fat cannot be regarded as unabsorbed food fat only. In a recent paper Hill and Bloor [21] conclude, as a result of experiments on cats, that fat is to be found in the fæces, whether it is present in the food or not, and that fat in the food increases fæcal fat, but only to a comparatively small extent. These results, they think, favour the idea of a fat excretion from the intestine. Such a possibility must be admitted, but if fat excretion occurs in infants, the amount of fat excreted can only be very small, and is, indeed, negligible, for Holt found in a breast-fed infant an absorption of 99·2 per cent. of fat, and in an infant fed on cow's milk an absorption of 97·4 per cent. In our own experiments we have found an almost identical figure—namely, 97·7 per cent.—in an atrophic child fed on a mixture of cow's milk and skimmed cow's milk. In our experiments 398 stools were examined from 63 children, who were under treatment for infantile atrophy or pyloric stenosis. In some instances the same child was examined for more than one period, the actual number of children investigated being 51. In some of the cases every stool was examined, but in the majority 24 hours' specimens, as previously described.

Hutchison states that the fat output in the fæces varies directly with the fæcal weight, and forms approximately one-third of this. By fæcal weight he means the weight of the dried fæces. Holt, *et alia*, were not able to confirm this, their average figure was 34·5 per cent., but in children not exceeding six months old it was 37·5 per cent. of dried fæces, and the percentage varied from 11·2 to 82·6. Our results confirm their findings, and the average works out remarkably close to this figure, being 37·26 per cent., the actual percentages varying from 11·5 to 63·5. An average figure, however, where there are such extreme variations is of little value. As a general rule, the percentage of fat in the fæces varies directly with the percentage of fat in the food. Fat splitting throughout the series is good, and in two cases only did the neutral fat form more than 20 per cent. of the total fat. In Holt's series cleavage was always good, except in cases of diarrhœa, in which a large amount of unsplit fat was passed, in some cases forming 60 per cent. of the total fat in stools. This large increase in unsplit fat is presumably due to the rapid passage of food through the intestine. Several authors (Reeve-Ramsay,[22] Rosenstern,[23] Gray and Reynolds,[18] &c.) have suggested that in atrophy and pyloric stenosis there is weakening or diminution of the digestive ferments, and particularly of lipase. The results of the present series of experiments, and of former observations in pyloric stenosis, show that neither in atrophy nor pyloric stenosis is there any evidence of deficiency of pancreatic lipase.

Fat Absorption.

The average absorption from 43 observations in atrophic children gives a figure of 86·4 per cent., the lowest figure being 55·8 per cent. and the highest 97·7 per cent. If cases of pyloric stenosis after the Rammstedt operation are included, the average figure is unaltered. The table shows how this figure compares with other recent observations.

Hutchison: 73·5 per cent.
Utheim: 77 per cent. in all cases; 78 per cent. for cases which were observed over four and five-day periods.
Holt: 78·4 per cent. for all cases up to six months, excluding diarrhœa and severe diarrhœa; 81·1 per cent. for all cases up to six months in which digestion was not quite normal, but who were not suffering from diarrhœa; 88·6 per cent. in all cases—i.e., including children over six months, but excluding diarrhœa.

Distribution of Fat in Stools and Absorption of Fat on Different Dietaries.

Food.	Weight D.F.	% total fat.	Distribution % total fat.			Per 24 hours.			% absorption.
			Sap.	Free F.A.	Neutral fat.	Intake.	Output.	Absorbed.	
Dried humanised milk	10·2	47·4	67·2	23·4	9·4	30·0	5·1	24·9	73·9
Full cream dried milk	13·7	48·8	63·9	23·6	12·3	28·9	7·2	21·7	78·1
Half cream dried milk	2·6	26·4	82·3	9·1	0·9	9·9	0·7	9·2	91·0
Condensed milk	4·8	52·1	73·2	21·1	5·8	10·2	3·1	7·1	69·8
Milk, water, and lactose	—	41·2	73·2	14·9	14·4	—	—	—	—
Milk, water, and sucrose	5·8	37·6	71·3	22·6	6·1	20·6	2·2	18·9	89·2
Milk, water, and HCl	3·7	39·2	88·0	6·3	5·6	18·5	1·5	17·0	92·1
Milk, water, and D.M.	5·6	38·1	70·7	24·7	4·7	18·0	2·2	14·4	85·8
Skimmed milk .	4·9	15·4	81·5	10·0	8·5	8·6	0·7	7·9	90·4
(Pyloric stenosis)	3·8	32·7	77·8	15·7	5·8	11·2	1·3	8·5	86·5
Average (63 cases)	6·1	37·3	73·1	19·9	7·2	18·1	2·5	16·0	86·4

It is interesting to compare the percentage absorptions on different dietaries and with varying fat intake. Unfortunately the number of cases in some sections is a small one, but certain deductions seem justifiable. With the exception of one case fed on a condensed milk mixture, the lowest percentage absorptions are found with a dried humanised milk and a full cream dried milk. The highest percentage

absorptions are found with hydrochloric acid milk (one case), a half-cream dried milk, and skimmed milk mixtures.

I am quite unable to account for the low percentage absorption and high total fat in dried fæces in the case of the child on condensed milk. The stool showed one of the highest figures for free fatty acid (36·8 per cent. of total fat) in the series. According to Holt the free fatty acid in diarrhœal stools is over 30 per cent. of total fat, yet this child did not have diarrhœa. The milk was sweetened condensed milk, containing 2 per cent. fat, but I know of no observations which, in the absence of diarrhœa, show a diminished fat absorption when the sugar intake is large. The stools were semi-formed and showed some fat curds. It is true that over the period of the experiment the child lost 3¾ oz., but in a subsequent experiment 4 oz. were lost; during this experiment the child was fed on a skim milk mixture (0·8 per cent. fat), and showed an absorption of 83·9 per cent. The stools were still semi-formed, but the free fatty acid averaged only 14·6 per cent. of total fat, and the percentage of fat in dried fæces was 13.

I have not any figures for normal children, but Hutchison states that the average for his series was 89·7 per cent.; he does not, however, say whether they were artificially or breast fed, which is a point of considerable importance. For definitely normal children under six months fed on cow's milk modifications Holt's figures are 87·7 per cent. Comparing these figures with my own, it is quite obvious that fat absorption (in the absence of diarrhœa) is normal in infantile atrophy and pyloric stenosis.

CHART 1.

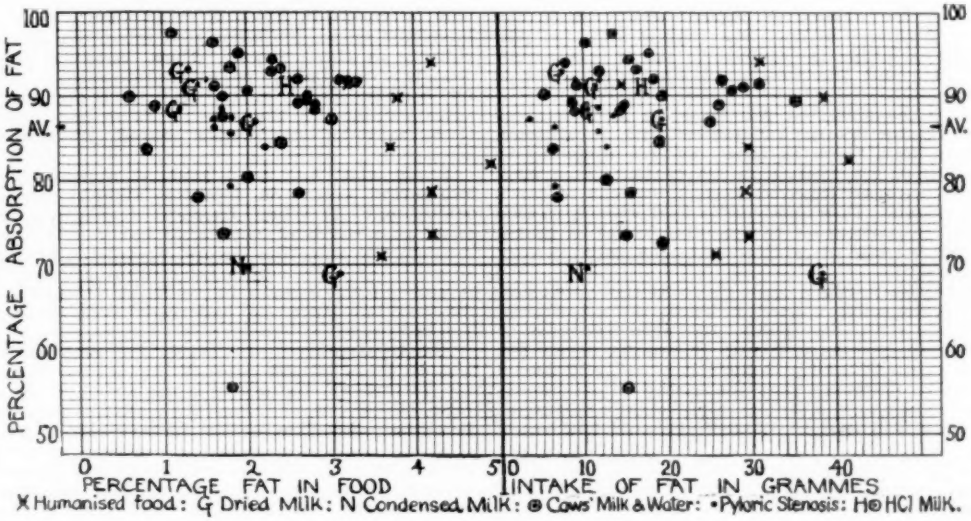

CHART 2.

CHART 3.

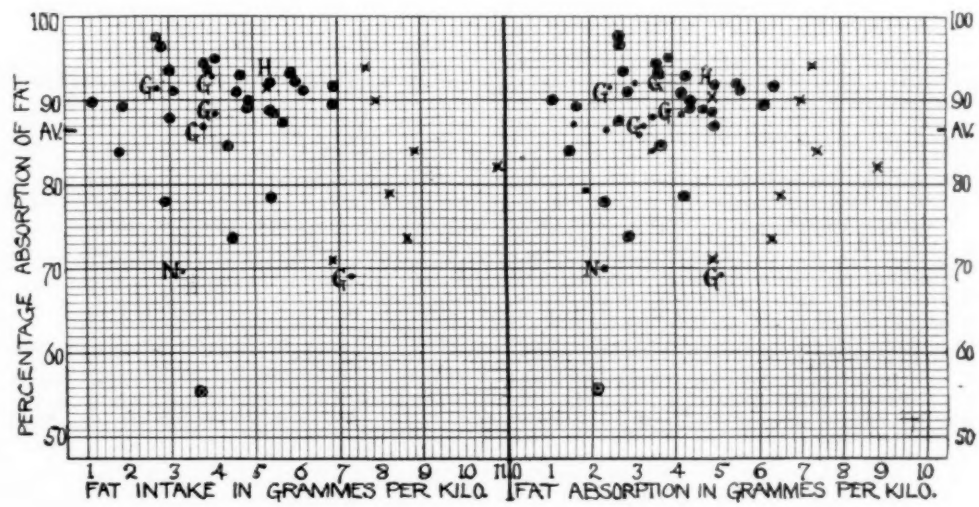

CHART 4.

In the series of graphs the figures for percentage absorption have been compared with—(*a*) the percentage of fat in the food (Chart 1); (*b*) the amount in grammes of the fat intake (Chart 2); (*c*) the amount in grammes of fat intake per kilo of body-weight (Chart 3); and (*d*) the amount in grammes of the fat absorption per kilo of body-weight. (Chart 4.) From the graphs it is seen (1) that atrophic

children show very good absorption figures for cow's milk modifications up to 3·3 per cent. of fat, a fat intake of 36 g. in 24 hours, or 7 g. per kilo of body-weight in the 24 hours; (2) that absorption figures for modifications of *dried* cow's milk are also good where the percentage of fat is 2·1 or less, the intake 20 g. or less, or 4·8 g. fat or less per kilo of body-weight in 24 hours; (3) that if modifications of dried cow's milk show higher fat values than this the absorption figures are nothing like so good (although in one case with a high fat percentage and intake the absorption figure was a very good one), and the weight of the dried fæces is higher.

Despite the fact that the digestion is normal (as shown by the figures for neutral fat), it appears, therefore, that there is much greater difficulty in absorption of fat when high fat content dried milk mixtures are used than when modifications of cow's milk are used. It is noteworthy that even with this difficulty in absorption the amount of fat in grams absorbed per kilo of body-weight may reach a very high value.

From these results I have come to the conclusion that high fat content dried milks are not economical foods from a fat standpoint, and although most of the children investigated put on weight when fed by this method (many doing very well), it seems reasonable to assume that the giving of an uneconomical food places a strain on the child's resources, which may well lead to what Finkelstein has called an "intolerance for fat." With the exception of one case, this is the nearest approach to Milchnährschaden, or intolerance for fat, that I have seen in my series of cases. The clinical experience of many observers, that half-cream dried milks produce better results than whole-cream dried milks, agrees with the above findings. The difficulty in fat absorption may possibly be associated with some alteration in fat emulsification, which occurs in the manufacture of dried milks, although it must be pointed out that of the two brands quoted, one is prepared by the spray system, by which it is stated that the emulsification is unaltered, and the other by the roller system. The criticism may be made that the dried humanised milk, to which I have referred, should not show a very high fat content; we have, however, found that this milk, used in the dilutions recommended by the manufacturers, always shows a high fat content.

The exceptional case to which I have just referred was apparently typical of Bilanzstörung (Finkelstein), or Milchnährschaden (Czerny). This child was an atrophic one, and lost 4½ oz. during the time of the experiment. He passed large white stools, which on drying gave a very high percentage of total fat and contained a large proportion of fatty acid; fat splitting was normal, but the fat absorption was the lowest in the series, being 55·8 per cent. The stools became somewhat less bulky when skimmed milk was given, but the loss in weight continued, and improvement did not occur until an ordinary milk mixture, containing ½ gr. of citric acid to the ounce, was given. On this the child gained weight, and the stools, although remaining pale, became normal in size. I would once more emphasise the rarity of this condition; it is the only one in our series, and was one of the last cases examined.

The findings of Holt and Fales[24] on fat requirements of children are interesting for comparison with our results. They state that healthy nursing children require 20 g. of fat daily, increasing to 40 g. at 6–7 months, or 4 g. per kilo of body-weight daily, but that infants fed on cow's milk should have smaller amounts than these; no actual figures, however, are given. The ideal fat intake according to Galbraith[25] is 18 g. daily in the first, rising to 28 g. in the seventh month. These values are calculated on the assumption that the breast milk contains 3·25 per cent. of fat. Our results show that many atrophic children fed on cow's milk can split larger amounts of fat, and also show that larger amounts than those stated, even by Holt and Fales, can actually be absorbed.

The presence of fat and soap curds in the stool is not certain evidence of fat indigestion; for in all cases where they have been observed, without diarrhœa, fat splitting has been normal and absorption satisfactory. The same remarks apply to the soap stool, which stool is in my experience not an abnormal one. Indeed, I am quite satisfied with the condition and prognosis in cases showing such stools, and I have not found the associated symptoms of Bilanzstörung in these cases. When, however, the soap stool is a very bulky one, as in some cases fed on high fat content dried milks, and in those very rare cases similar to the one I have just described, there may be, as already stated, diminished fat absorption.

From what has been said, it appears that fat indigestion occurs in infantile atrophy under two conditions: (1) When diarrhœa develops. In these cases as a result of peristaltic hurry, rapid passage through the intestine occurs, and fat splitting may be poor. (2) When high fat content dried milks are given. In these cases fat splitting is always good, the stool is a large one, and contains much soap and free fatty acid.

The treatment of artificially fed children in the first of these groups consists in putting them on a low fat dietary, and giving them carbohydrate in the form of one of the less fermentable sugars—e.g., dextrimaltose. The low fat dietary can be obtained by giving them skim milk, or a mixture of skim and whole milk; at times a condensed sweetened milk, diluted so as to give a low fat content, is found very useful, or one of the artificial foods used in the same manner. Protein milk has also proved valuable on occasions. When the diarrhœa improves, the fat content should be increased again, until the child is on a normal milk mixture.

A short preliminary period of starvation is often useful in these cases, particularly if the onset of diarrhœa is sudden (or possibly infective), but many children are so enfeebled that they are unable to stand this treatment. The treatment of the second group consists in giving a lower fat content dried milk, or substituting an ordinary cow's milk mixture for the dried milk.

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ESSEX PUBLIC MEDICAL SERVICE.—The Essex Public Medical Service, which was recently formed to provide medical attendance and medicine for persons unable to pay the ordinary medical charges, has made a successful start in the county. Certain medical men have shown enthusiasm in its promotion, while local committees have been formed in many areas of the county.

THE PANCREAS AND DIABETIC METABOLISM.

BY HORST OERTEL, M.D. YALE.

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I AM prompted to the following communication by the renewed interest in the nature and metabolism of diabetes mellitus which has received a strong stimulus by the discovery of "insulin," and further, by recently published observations of Geelmuyden on the formation of carbohydrate in the animal organism and on intermediary metabolism in diabetes mellitus. Geelmuyden's findings and conclusions fit so remarkably with those of Milne and Peters made in my laboratories in New York some years ago (1912),[1] that I think it worth while to draw renewed attention to them, especially as they did not attract at that time the consideration which, I think, they deserved.

Objections to Prevalent Beliefs Concerning Insulin.

The prevalent belief to-day seems to be that insulin is a secretion of the islands of Langerhans—hence the name "insulin"—and that it furnishes something which "aids in the burning of the blood-sugar." Both of these ideas, it seems to me, stand on a very insecure and, as I believe, erroneous basis.

The first contention—that the islands of Langerhans are a secretory unit for the purpose of an internal secretion—is supported by the following considerations: (*a*) Acceptance of morphological independence of the islands; (*b*) certain changes in the pancreas resulting from the tying of its duct; (*c*) specific staining properties of island cells; (*d*) evidence that in Elasmobranch and Teleostean fishes islands occur in independent locations removed from the main portion of the pancreas, and that insulin has been recovered from them; (*e*) certain older pathological evidence which placed essential diabetic lesions into the islands.

Against all of these considerations much may be said, but I shall be content to point out here what seem to me some of the most important objections.

The islands are not wholly independent structures which are simply carried by, and embedded in, the pancreas. Thus, the pancreas differs decidedly from the suprarenal glands in which two genetically different units have fused. The islands are embryologically derived from the same cell elements as the rest of the parenchyma, and they are particularly abundant in the embryonic and evolving pancreas. They can, by serial sections, be shown to have intimate connexion with the pancreatic parenchyma and even with the ducts, and indeed the resemblance to ducts and their intimate connexion with old ducts in certain pathological cases is most striking. Moreover, they cannot during certain phases of normal regression, but particularly in the abnormal, atrophic pancreas, strictly be separated from pancreatic parenchyma. Thus, also, in older subjects groups of acini may again take on the appearance of islands and typical acinar cells, and transition to acinar arrangement are sometimes seen in islands. Again, island cells or even groups of cells occur connected to other cells in pancreatic acini. Further, in pancreatic reductions from whatever causes (senility, emaciation, essential atrophy) there appear quite definite transition pictures. In advanced cases of this sort islands have thus largely disappeared without leaving any morphological evidence of destructive loss, such as a scar, or of degenerative changes in island cells. On the contrary, in general pancreatic atrophy island cells are often noted to become more numerous, larger, their connexions with parenchyma more intimate, without definite lines of demarcation, and in tinctorial qualities and arrangement they approach acinar or duct cells. This perplexing loss of islands by "evaporation," without leaving other morphological evidences of the mechanism of their disappearance than transitions to parenchyma, becomes thus intelligible. It is in these cases often impossible to demonstrate exactly where acinar tissue ends and islands commence, and numerous islands or duct cells appear in acini, while acinar cells are to be seen in islands. The conclusion, therefore, is strongly suggested, particularly by pathological material which has the advantage of throwing certain pancreatic changes and cell relations into greater relief, that the islands are an integral part of the pancreas, interchangeable with the parenchyma. The islands appear therefore as a phase in the constant morphological fluidity of the pancreas and consequently are an important feature of normal and pathological life of the organ.

These conclusions were reached by Milne and Peters, in conformity with findings of other authors, years ago, and continued investigations of a large number of normal organs representing different ages and evolutionary changes, combined with evidence from diabetic cases, have only strengthened my convictions in this respect. (In parenthesis it may be stated that I consider the diseased human pancreas, by exaggerating certain of these changes and morphological pictures, a more valuable source of information than the normal pancreas of lower animals.)

Experimental Cirrhotic Atrophy.

But now the experimental cirrhotic atrophy of the pancreas after ligature of its duct throws additional doubt on the independence of the islands, instead of supporting it. It is true that after ligature of the duct there occurs an extensive cirrhotic loss of pancreatic substance, and ultimately only solid clumps of cells remain embedded in fibrous tissue. These isolated clumps of remaining cells have at times the appearance of islands, but it is possible in many instances to trace the formation of such apparent islands through various stages back to atrophying acinar cells. Thus, also, it is possible to see in the earlier stages of this experimental pancreatic atrophy in the dog parenchymatous nodules still plainly visible, but at the edge of these there appear small pale cells. These may resemble the normal islands of the dog, but may generally be traced to some connexion with acini. I have, and so have others, made very similar observations in human cirrhosis of the pancreas. In other words, certain identification of islands as old persistent structures in a new cirrhotic environment is not possible, as old remaining parenchymatous nodules may take on this appearance and thus simulate islands.[2]

Identification of Islands by Staining.

There remains the identification of islands by specially designed staining methods (Bensley, Lane, Kirkbride, Jackson, &c.). This method seems to work well in some normal lower animals when immediate fixation is possible. But it is not applicable to all animals with equal surety, as shown by Milne and Peters, and it is entirely unconvincing in the abnormal pancreas and quite impossible to apply to pathological human cases. And I have learned that it is, especially in pathological cases, safer to depend upon general morphological appearances than upon complicated staining reactions of granular contents. That applies to other tissues as well.[3] But even if we admit that island cells have specific staining qualities, nothing else is indicated thereby except what we already know—i.e., that morphologically they differ from ordinary acinar cells. It does not, in any way, establish their structural and functional

[1] L. S. Milne and H. Le B. Peters: Atrophy of the Pancreas after Occlusion of the Pancreatic Duct, Jour. Med. Research, Boston, July 3rd, 1912, xxvi., 405. Same authors: Observations of the Glycolytic Power of the Blood and Tissues in Normal and Diabetic Conditions, ibid., 415.

[2] The pancreas follows in this respect similar changes in other glandular organs, when put into new (cirrhotic) environment, and it is necessary to retain only a very small amount of parenchyma (a nodule not larger than a pea) to prevent diabetes.

[3] Thus, Waugh has lately demonstrated in these laboratories that the oxidase reaction of mycloplasts varies under pathological conditions, and that this depends not only upon the degree of differentiation, but upon other, as yet obscure, variations from the normal cell type.

independence or invalidate the observations on transitions.[4] Indeed, the latest observations of Jackson on the islands of Elasmobranch and Teleostean fishes demonstrate their direct genetic relation to pancreatic ducts, although Jackson claims for them independence from parenchyma. The findings on insulin yields from these islands in fishes which carry them independently from the main part of the parenchyma, it would seem, have lost much value since insulin has been so generally found in other glands and tissues of the body. Indeed, some observers lean now toward the view that the pancreas is a "store-house for insulin."

Pathological Evidence of Island Change in Diabetes.

Finally, when we come to the older pathological evidence of island changes in diabetes, which were at one time highly regarded as indicating their independent functional position, it must, I think, be admitted that sufficient evidence has now accumulated to throw considerable doubt on such changes in relation to diabetes. In the first place, observations by Reitmann, and further by Milne and Peters, have shown hyaline changes very similar to those in diabetes in non-diabetics, especially older persons or cachectics. Milne and Peters observed such hyaline changes in pancreatic acini of normal animals, which then resembled hyaline islands very closely. Reitmann regards focal hyaline degenerations as secondary consequences to cachexias or supervening infections to which diabetics are eminently liable (for example, tuberculosis, with hyaline or amyloid degenerations). According to my own observations such hyaline islands or foci are frequently found in diabetics with subsequent tuberculosis. They commence, very much like amyloid, with a capillary hyaline swelling. Whether such "islands" are always the Langerhans cell complex, or simply detached parts of parenchyma, cannot always be stated with certainty.

The evidence here presented indicates that the independent anatomical and functional position of the islands is not established beyond doubt, but to the contrary, rests on an uncertain basis. For these reasons certain investigators—notably von Hansemann, Herxheimer, Reitmann, and myself—recognise the importance of the pancreas in its relation to metabolism, not in a particular secretion of the islands of Langerhans, but in activity of the whole organ. Reference has already been made to the instability or fluidity of the whole pancreas, of which the islands are an indication and a phase. In fact, the whole pancreas is, as investigations of Reitmann, Anderson, and myself have demonstrated, in constant regression and progression. The pancreas resembles in this respect other important organs notably of internal secretion.[5] Atrophy, degeneration, collapse of acinar cells, and of whole acini are normal performances in the pancreas, and they are, under normal conditions, almost immediately compensated for by regenerative events. Thus the normal pancreas presents constant, sometimes quite extensive and varied pictures in loss and reconstruction of secretory parenchyma and architectural arrangement. This, as I have pointed out elsewhere, is of great pathogenic importance. For, while normally these two groups of processes—the regressive and the progressive—proceed side by side in orderly physiological balance, they may become upset and, by exaggeration or inhibition of one or the other, lead to pathological states. In this manner develops, in my opinion, the essential atrophy of the pancreas which is more commonly to be found in severe diabetes of the young than the cirrhotic (inflammatory) atrophy.[6]

[4] I take these so-called "independent islands" to be only phases in the gradual phylogenetic condensation of the, at first, diffuse pancreatic substance to a localised organ.

[5] Reitmann: Beiträge zur Path. der menschlichen Bauchspeicheldrüse, Zeitschr. f. Heilkunde (Abt. Path. Anat.), 1905, xxvi., 1. Oertel: Post-natal Development and Path. Organ Reconstruction, Amer. Jour. Med. Sci., 1921, vol. clxi., 5, p. 694.

[6] Oertel, H.: The Essential Atrophy of the Pancreas, Jour. Med. Res., Boston, 1919, xl., 3; On Certain Changes in the Pancreas in Diabetes Mellitus, Sci. Reports of the Royal Victoria Hospital, 1916, Series B, I, 155. Oertel and Anderson: Regressive and Progressive Changes in Pancreas, ibid., p. 163.

Glycolytic Power of Blood and Tissues in Normal and Diabetic Conditions.

Prompted by their morphological investigations, which threw doubt on the independent structural and functional standing of the islands, Milne and Peters were led to continue their researches into certain experimental observations on the glycolytic power of the blood and tissues in normal and diabetic conditions. They found that the tissues in pancreatic diabetes could utilise dextrose, while the blood serum of depancreatised dogs possessed a marked diastatic action on glycogen, converting it into sugar, which action was increased, sometimes markedly, above the normal. Taking into consideration further that the glycogen contents in tissues are generally reduced in diabetics, they concluded that the disease would seem to depend on an excessive production of glucose from glycogen. This increased production may be the result of a failure of secretion of an antidiastatic enzyme, or, it seems more probable, due to the action of accumulated substances in the serum which normally should be destroyed or altered by the pancreas. These substances increase slightly the diastatic power of the serum, but their chief action is more likely in the direction of causing the tissue cells to convert their store of glycogen into glucose. As an analogous process it is not unlike what in certain conditions occurs in the fat metabolism of cells. In all forms of diabetes, then, either as the result of pancreatectomy, ether, sugar puncture of the brain, or phloridizin, there is a rapid diminution of glycogen in the tissues. This is associated with an increased formation of glucose, at times considerable, and resulting in hyperglycæmia and glycosuria. The ability to form glycogen, however, still remains, so that new glycogen may continually be produced. This increased conversion of glycogen into glucose may be considered as due to the direct action of certain substances, such as phloridizin, ether, or products retained in the serum by pancreatic insufficiency, which increase the diastatic power in the blood serum, or act on the tissue cells so that they rapidly convert their store of glycogen into sugar." Thus Milne and Peters expressed themselves in 1912, basing their remarks on morphological and experimental investigations.

From this standpoint the recent observations by Geelmuyden on carbohydrate formation in the animal body and on the intermediary metabolism of diabetes appear of particular interest.[7] For Geelmuyden, quite in ignorance of the previous work of Milne and Peters, and by very different methods, has arrived at the conclusion that in diabetes occurs a hyperproduction of sugar from fats and proteids, and this he attributes to the uncontrolled action of adrenalin.[8] He interprets the beneficial effects of insulin as due to an inhibition, or at least to a decrease, in the sugar conversion. Thus, also, he explains the rise of the respiratory quotient after the administration of insulin, not by an increased burning of sugar, but as due to a retardation or cessation in the formation of carbohydrate from proteins and fats. In other words, he also believes that the pancreas "regulates" the action of adrenalin, that is, the conversion of glycogen and fat into sugar. If this step is omitted in the intermediary metabolism, hyperglycæmia and glycosuria result.

I am well aware that certain recent experimental investigations into the action of insulin such as by Bissinger, Lesser, and Zipf in frogs, and Noble and McLeod in the turtle, and some others argue rather against the views expressed by Geelmuyden as regards the antagonistic rôle of adrenalin and insulin in intermediary metabolism. But here it must be remembered that these observations were done with isolated organs (livers) of cold-blooded animals and are in contradiction to other observations, especially

[7] Geelmuyden, H. Chr.: Die Neubildung von Kohlenhydrat im Tierkörper. Ergebnisse der Physiologie, 1923, Bd. 21, 1., 274; Über den intermediären Stoffwechsel beim Diabetes Mellitus, Klin. Woch., 1923, ii., p. 1677.

[8] I consider it possible that other organs of internal secretion, like the thyroid, may also be here concerned.

those of McLeod and Banting and their co-workers, who found a decided increase of glycogen and a corresponding decrease in fat in diabetes.[9] On the other hand, it appears from observations of Büchner and Grafe, and of Staub, that the action of insulin is so complicated and general that we are as yet far from fathoming its real relations to intermediary sugar metabolism. However that may be, all these investigations only indicate further the uncertainty and lack of fundamental knowledge in the action of insulin and nothing in these observations supports the view that "insulin" is an internal secretion of the islands of Langerhans. On the contrary, Büchner and Grafe's investigation point towards insulin action as a general cell function.

I think sufficient evidence has been produced to show that there is at present still a reasonable uncertainty in the exact mechanism of the relationship of the pancreas to sugar metabolism. In my opinion, there exists enough morphological as well as experimental evidence, of which I have personal knowledge and in which I have faith, to question the independence of the islands and the conception of them as organs of internal secretion which are essential for the combustion of sugar.

NOTES ON A SMALL OUTBREAK OF TYPHUS FEVER IN ENGLAND.

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IT is well known that there constantly exists a risk of the importation of typhus fever into this country by way of the great ports. This risk was especially marked during the years immediately following the end of the war, when the disease was epidemic in Poland and Russia, and when there was constant movement of refugees from infected areas. It was the fortune of Birkenhead to experience such a visitation in March, 1922. The disease was presumably introduced from abroad; we were, however, unable to trace the actual mode of entry—one of the chief difficulties in this connexion being that the first cases were not recognised and did not come under our notice until some five weeks after the onset of symptoms, and then only because further cases were occurring.

On March 29th nine patients were admitted to the Birkenhead Infectious Diseases Hospital, suspected to be suffering from typhus. Seven of the patients were removed from the Birkenhead Poor-law Infirmary at Tranmere, where they had been under treatment for varying periods. Two of these were convalescents, having been in hospital 30 and 20 days respectively; the remainder were recent cases—one had been in hospital four days, two two days, and two one day. Of the other two patients, one had been presented for admission at the Poor-law infirmary on March 29th, after the other cases had been removed, and was sent on to the infectious diseases hospital. The other was taken direct from her home. The two convalescent cases, admitted to the Poor-law infirmary at a time when an influenza wave was at its height, had been dealt with as cases of that disease, several of their symptoms being suggestive. It had been recognised, however, that certain unusual features were present; and with the appearance from the same or neighbouring houses of fresh cases which showed a similar clinical picture the suspicion was aroused that some other infectious disease of a specific character was being handled, and the medical officer of health was communicated with. The cases were seen in consultation with Dr. G. J. French, the medical superintendent of the Poor-law infirmary, on the evening of Tuesday, March 28th, and were removed to the infectious diseases hospital on the following day. A short observation of the patients in the infectious diseases hospital, particularly of the two most recent cases, confirmed the suspicion that they were suffering from typhus fever; and further corroboration followed when a positive reaction to the Weil-Felix test was obtained.

The history of two other patients who had been admitted to the Poor-law infirmary on Feb. 28th and March 2nd, and who had died there on March 6th and 7th respectively, leaves little doubt that they succumbed to the same disease. Finally, a boy of 4 years of age, a son of one of the above cases, who was admitted to the reception ward at the infectious diseases hospital for quarantine on March 31st, developed symptoms of typhus on April 7th, having been infected prior to admission. The total number of recognised cases was, therefore, 12. It would be unreasonable, however, to expect that this represents in its totality the extent of the outbreak, and that no cases escaped identification.

Particulars of the 12 cases are shown in Table I.:—

TABLE I.—*Typhus Cases: Age, Sex, &c.*

Case No.	Init.	Age.	Sex.	Probable date of onset.	Admission to—		Result.
					P.L. hosp.	I.D. hosp.	
1	M.L.	32	F.	20/2	27/2	29/3	Recovered.
2	T.O.	18	M.	23/2	28/2	—	Died 6/3/22.
3	H.O.	53	F.	23/2	2/3	—	Died 7/3/22.
4	I.O.	24	F.	2/3	9/3	29/3	Recovered.
5	J.O.	52	M.	20/3	27/3	29/3	,,
6	L.O.	20	F.	23/3	27/3	29/3	,,
7	J.O.	28	M.	23/3	28/3	29/3	,,
8	W.O.	24	M.	27/3	28/3	29/3	Died 12/4/22.
9	M.R.	31	F.	23/3	—	29/3	Recovered.
10	M.R.	44	F.	19/3	25/3	29/3	,,
11	C.D.	44	F.	23/3	—	29/3	,,
12*	J.R.	4	M.	7/4	—	7/4	,,

* Developed disease while in reception ward, to which he was admitted on March 31st.

Clinical Features.—The clinical features of the ten patients treated at the infectious diseases hospital differed considerably. It might, in fact, be said that among this comparatively small number all types of cases were seen, from the mild case which, had it not been for the history and the diagnostic tests applied, would certainly have escaped detection, to the severe form resulting in a fatal issue. One outstanding feature given in the history of all the patients was *headache*, generally coming on suddenly and in a severe form. Other symptoms were not so constant. The cases may be classed as follows:—

Convalescent (no symptoms of disease on admission to infectious diseases hospital) (Cases 1 and 4)	2
Mild (Cases 9 and 12)	2
Moderate severity (Cases 5 and 6)	2
Severe (Cases 7, 8, 10, and 11)	4

The individual cases, however, showed such differences that it will be best to describe each separately.

CASE 1.—Female aged 32. Took ill Feb. 20th, 1922. Headache, sore-throat; went to bed at once. Admitted to Poor-law infirmary (P.L.I.) on the 27th, but does not remember this. On admission to infectious diseases hospital (I.D.H.) she was not complaining; appeared in ordinary health, gave a faint positive diazo-reaction [1] and presented no other features of clinical interest. Discharged recovered on April 13th.

CASE 4.—Female aged 24. Took ill Feb. 23rd, suddenly, in a shop, went "light-headed," kept on feet for a week, went to bed on March 2nd, feeling "ill all over" and having pains in the chest. On admission to I.D.H. was not complaining, and beyond a faint positive diazo-reaction, which persisted for four days after admission, there were no features of clinical interest. Discharged recovered on April 13th.

[9] The diverse and conflicting observations in this regard suggest that different animal species may have a different carbohydrate metabolism.

[1] A doubtful reaction. In Table II. only quite definite positive findings have been entered as "positive" and doubtful ones regarded as "negative."

CASE 5.—Male aged 52. Took ill March 18th, complaining then of pains in head and back, shivering, cough. Pains spread all over and "couldn't get out of bed." Was treated at home for a week and admitted to P.L.I. on the 27th. On admission to I.D.H. on the 29th looked ill, was complaining of headache and cough, and had some expectoration. T. 102·2°, P. 96. Evidence of arterio-sclerosis; slight bronchitic signs throughout the chest, slightly deaf, dazed and rather resentful of questions. One or two indefinite spots on the back but no real rash. Diazo-reaction positive. Remained in much the same state, chest symptoms being prominent, till April 2nd, when there was a sudden improvement, the patient seeming better in every way. The next day he not only demanded food vigorously, but was most anxious to get up. After this crisis he rapidly improved and convalescence was uneventful. Discharged recovered on the 27th.

CASE 6.—Female aged 20. Took ill on March 23rd, when she complained of headache, swollen glands in neck, and a pain in the right shoulder. Took to bed on the 25th feeling much weaker and worse in every way. Admitted P.L.I. on the 27th and I.D.H. on the 29th. On admission mentally quite clear, complaining of headache, sore neck, weakness, and cough. On examination no rash was seen. Diazo-reaction brilliantly positive; patient looked ill, under-nourished, and anæmic. T. 102·4°, P. 100. Headache and cough persisted for a few days, but by April 4th patient definitely improving, practically convalescent by the 6th. On the 7th complained of pain in left calf, which was tender on palpation, and the whole leg markedly swollen—a diagnosis of popliteal thrombosis was made. This complication cleared up after about a week, when the patient made a good recovery. Discharged recovered on May 9th.

CASE 7.—Male aged 28. Took ill on March 21st with shivering, cough, and headache. On admission to I.D.H. on the 29th complained of "being sore all over," but could not give a connected account of how he felt, as he was distinctly delirious—a low muttering stupor. Obviously ill; a cough, markedly dilated pupils, tongue furred; a definite general rash, profuse on trunk, more marked on back than on chest and abdomen, well marked on legs and arms, forearms showing fewest spots. Face blotchy but showed no spots. Individual spots at this stage resembled those of enteric. Two days later the rash was even more marked, fresh enteric-like spots appeared, and in addition deeper subcuticular spots were showing up well, giving the skin a distinctly mottled appearance. During this time patient was very ill. Delirium continued, and the bowels were rather loose, tremor of lips and hands noted. On April 6th rash began to fade and there was a distinct improvement in general condition—the patient being clear mentally and complaining of hunger for the first time. Next day the improvement was maintained and the patient was practically convalescent. The change, in a day or two, from a profoundly ill to an almost well man was very striking. No special features of interest during convalescence. Patient was discharged recovered on the 27th.

CASE 8.—Male aged 24. History given by patient was that of waking up on March 25th with headache, cough, pains all over, and a shivering attack. He was up during the next two days, but felt ill all the time. On the 28th he took his brother (Case No. 7) up to the P.L.I. and, it being noticed that he was ill, he was detained there. On admission to I.D.H. he was complaining of intense headache, cough, and pains in back and hips. Although he was obviously ill, his mental condition was clear. Slight deafness. T. 104·2°, P. 96. Brilliant diazo. Well-marked rash on sides of neck and trunk (most profuse on back). Spots noted on arms, none on legs. Individual spots small, lenticular, slightly raised, pinkish papules not unlike enteric. None seen on face. Next day patient much the same, but rash markedly petechial on right forearm, being obviously brought out by application of tourniquet for vein-puncture on the previous day. On April 2nd rash still more marked, and subcuticular elements were made out, the distribution remaining as before. On the 3rd patient's condition worse; he still complained chiefly of headache and was markedly cyanosed. Restless and delirious at times. Next day much worse, semi-conscious, restless, more cyanosed; constant hiccough. Rash well marked. He continued much in this state for several days, mental condition very confused, with struggling, muttering, and shivering fits. On the 8th rash still very marked and fresh spots noted on arms; general condition as before. On the 10th, as his condition was getting desperate, it was decided to give him whole blood intramuscular injections from a typhus convalescent—adopting the technique used with success by Zingher in cases of toxic scarlet fever. The donor was his father (Case 5), then in the twenty-fourth day of disease and the tenth of his convalescence; 125 c.cm. of whole blood were transferred—the temperature fell to normal within 12 hours (? artificial crisis), but there was no real improvement in the other symptoms. On the 11th he was still very ill, but more drowsy and not so restless. He died on the 12th.

CASE 9.—Female aged 30. On March 22nd this patient complained of severe headache and went to bed—the only other symptom complained of was some stiffness in all joints. On admission to I.D.H. (on the 29th) she still had some headache but otherwise did not complain. Face flushed and tongue furred. She was 7½ months pregnant. Diazo positive. There was an indefinite rash present consisting of a few papules on the chest and rather more on the back—under normal conditions they would hardly have attracted attention. She slept well and showed no further symptoms during the next few days. By April 6th temperature was normal and patient convalescent. Discharged, recovered, on the 27th.

CASE 10.—Female aged 44. Patient too ill to give any definite history. She was in P.L.I. from Jan. 30th to March 4th, suffering from pneumonia. Returned home on the 4th and took ill again on the 19th, when she collapsed, had severe headache and malaise. Readmitted to P.L.I. on the 25th and on that date was stated to have had a rash. On admission to the I.D.H. on the 29th she was very ill and exhausted, too weak to speak and with rapid respirations. A few spots on the abdomen and chest and rather more on the back—none noted on limbs. T. 100°, P. 129. Diazo brilliantly positive. This patient lay in an absolutely exhausted state until April 6th, when she showed signs of more life and gradually began to pick up strength. Discharged, recovered, on the 27th.

CASE 11.—Female aged 44. This patient took ill on March 23rd when she suddenly began to vomit, had pains all over and a severe headache. On admission to I.D.H. on the 29th she only complained of a "thick feeling in the throat." Face flushed and somewhat bloated. Distinct deafness, pink conjunctivæ, and small pupils. Cough. Slightly cyanosed. T. 100·2°, P. 116. Diazo brilliantly positive. Well-marked rash on chest, abdomen, back, and upper arm; most profuse on back; none on legs. Elements were somewhat large and persisted after pressure—subcuticular mottling well seen—i.e., spots resembling faint indefinite petechiæ. Patient dull, stupid, and obviously ill. On March 31st rash definitely petechial on forearms, particularly so on right side, where tourniquet had been applied; also a few petechial spots on legs; stools loose and light yellow. For three days this patient was acutely ill—marked rash with the subcuticular element very obvious, dusky red face, red eyes, small pupils, tremors, stupid, deaf, muttering. On April 4th she showed a distinct improvement and smiled for the first time. The rash was beginning to fade. Steadily improved, but on the 11th (twentieth day of disease) she developed a left otorrhœa. This gave rise to no trouble, and was dry within a week, after which she made an uneventful recovery. Discharged, recovered, on the 27th.

CASE 12.—Male aged 4. A son of Case 9. Admitted to reception ward 8 on March 31st together with other typhus contacts. On April 7th had temperature of 100·8°, was fretful, and there was a definite rash on the trunk and limbs. Spots widely separated, resembled enteric spots, and very distinct. Constitutional symptoms slight. He was transferred to the typhus ward. The diazo-reaction was strongly positive. The next day the rash was more profuse, though the elements were not so distinct, this being due to the development of subcuticular mottling. Both trunk and limbs were involved—it was most marked on buttocks, more on back than front and more on legs than arms. Throat slightly congested and tongue slightly furred, mucous membranes of mouth were clear and shiny, face blotchy and showing a slight tremor. Slight cough; child still fretful though not really ill. Sleeping and eating well. No further symptoms. Rash began to fade on the 9th, and gone by the 12th. Uneventful convalescence. Discharged, recovered, on May 9th.

Diagnostic Features.

The difficulties in the way of the early diagnosis of a disease with which few practitioners in this country have had any practical acquaintance are, naturally, very great. At the same time, once it was recognised that it might be typhus we were dealing with, the diagnostic difficulties became very much less. Once typhus was in mind, the history of a sudden onset, the presence or history of a rash, positive diazo and Weil-Felix reactions, left no room for doubt that a case *was* typhus. Here it must be emphasised that clinical and laboratory findings must be taken together—it is a mistake to speak of clinical as opposed to laboratory diagnosis, and a diagnosis can only be arrived at by a careful summing-up of all factors.

With regard to the differential diagnosis, only two other diseases needed seriously to be thought of: influenza and enteric. (*a*) With regard to the former it is wise to adopt an attitude of caution; as a convenient term for describing an acute febrile condition without specific character it may be very useful, but apart from epidemics such as occurred in 1918–19 it may be seriously questioned whether the disease is a clinical entity. At all events, in every case of so-called influenza every other possibility must be reviewed. In the outbreak dealt with the presence of a rash, the characteristics of this rash, and the presence of a positive diazo-reaction sufficed to exclude influenza. (*b*) Enteric is more difficult, and the distinction is mainly clinical, the important points being sudden onset, type of rash, particularly as to its distribution, and the presence of subcuticular and hæmorrhagic elements, the absence of abdominal symptoms, and, though too late to be of much practical importance, the crisis, and the remarkably sudden improvement that occurs then. The Widal test is of no distinctive value as it is frequently positive in typhus. The Weil-Felix reaction is of great practical value, though being a non-specific reaction further experience of its presence or absence in enteric is to be desired.

In the present investigation the Weil-Felix tests were carried out in the Birkenhead municipal laboratory, living cultures of *B. proteus X 19*, kindly supplied by the Lister Institute, being used. With regard to the technique of the tests, we obtained much help from a paper published in THE LANCET on Feb. 4th, 1922, by Prof. James Wilson.

So much stress has been laid upon the laboratory helps to diagnosis that it will be well to give a summary of the findings in each case in Table II. It will be

TABLE II.—*Results of Laboratory Findings: Weil-Felix, Diazo, and Widal Reactions.*

Case No.	Weil-Felix R.	Diazo R.	Widal R.
1	P. 1/400.... 39th. N. 50th.	N. 38th.	N. 50th.
4	P. 1/200 35th.	N. 37th.	
5	P. 1/400.... 13th. P. 1/6400 23rd.	P. 12th and 14th. N. 16th.	N. T.A.B. 23rd.
6	P. 1/400.... 12th. P. 1/400 21st.	P. 8th and 13th. N. 17th.	N. T.A.B. 21st.
7	P. 1/25,000 14th. P. 1/6400 21st.	P. to 17th. N. 21st.	P. T. 1/100 21st.
8	N. 6th. P. 1/800 12th and 1/1600 17th.	P. 6th to 19th (died).	P. T.A.B. all 1/200.... 17th.
9	P. 1/400.... 13th. P. 1/200 22nd.	P. 10th and 11th. N. 13th.	N. T.A.B. 22nd.
10	P. 1/400.... 13th. P. 1/200 25th.	P. 12th and 15th. N. 17th.	N. T.A.B. 25th.
11	P. 1/400.... 8th. P. 1/400 21st.	P. 8th to 15th. N. 17th.	P. T. 1/400.... 21st.
12	P. 1/800.... 6th.	P. 2nd to 10th. N. 11th.	N. T.A.B.... 6th.

P = positive. N. = negative.
The ordinal numbers represent days.

Note.—All days referred to are days of disease. The figures in the agglutination tests show the highest dilution in which the test was positive. A series of dots after the figure—e.g., 1/400....—indicate the limit of the test, and it is possible that a higher end-point would have been obtained had this been tested for.

seen that the Weil-Felix test was positive in all cases. It was not present in one case on the sixth day, but appeared later, and another previously positive was negative on the fiftieth day. The diazo-reaction was positive, generally speaking, throughout the febrile period and became negative after the crisis. The Widal was irregular, being positive in three out of the nine cases investigated.

Method of Spread.

It has always been recognised that typhus tends to flourish and spread in places where dirt abounds—rooms with dirty floors, dirty walls, dirty bedclothes, calling for the use of soap and water; and dirty air, calling for the use of open windows. It has also long been known that another disease is fostered by the same conditions—pediculosis. Recent investigations have shown that these two diseases are associated to this extent at least, that the infection of typhus is carried from person to person in one way and in one way only—by lice. After feeding on and absorbing blood from a typhus patient they transfer their attention to a healthy individual; and in due course the latter develops the characteristic symptoms of typhus. Nits from an infected louse can hatch out young lice which are infected and can carry the disease.

Administrative Action Taken to Check Spread of Outbreak.

The chief steps taken in dealing with the outbreak under consideration may be briefly indicated.

(*a*) Removal of all recognised cases to the infectious diseases hospital. All patients were passed through a delousing room before entering the ward. Here hair was shaved and measures taken to remove all lice and lice eggs (nits). Protection in the form of special overalls, &c., were devised for the nurses, medical staff, porters, &c.

(*b*) Removal of contacts from patients' homes to an emergency quarantine station fitted up in the infectious diseases hospital. All these individuals were also deloused and bathed before admission.

(*c*) Search for all persons who had been in contact with known cases of the disease, and constant watch for new cases.

(*d*) Disinfection by steam of all clothing, &c., used by patients and contacts. Destruction of rags and other rubbish—present in abundant quantities in many houses where space is limited.

(*e*) Disinfection and disinfestation of houses.

Most of the houses were of a very poor and dirty type. The disinfection and disinfestation had to be carried out at considerable risk to the men engaged. Walls, ceilings, floors, and furniture were washed with corrosive sublimate solution, and sulphur fumigation was carried out. Similar steps were also taken in connexion with the wards, &c., at the Poor-law infirmary which had been occupied by patients suffering from the disease. With the exception of the case which developed in quarantine (No. 12), and which presumably contracted the disease before admission, no further cases occurred.

Our acknowledgment and thanks are due to Dr. French for certain clinical data collected regarding patients during their stay in the Tranmere Poor-law Infirmary, and to Dr. Percival Letts, of the Ministry of Health, and Dr. C. O. Stallybrass, both of whom kindly discussed the cases and the outbreak generally.

HYSTERICAL BILATERAL PTOSIS AND CONVERGENCE EXCESS.

WITH NOTES OF A CASE.

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AND

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"To the disturbances of the functions of the eyes we are often able to apply tests more delicate than those which pertain to the investigation of other organs, and therefore should be able more accurately to interpret their symptoms."—*G. E. de Schweinitz.*

IN investigating curable nervous affections which consist of involuntary dissociation of voluntary functions, it is well to bear in mind that symptoms depend mainly on the site of a lesion. Any motor disturbance may be localised approximately. In the lower limb, loss of every movement except flexion, adduction, and internal rotation of the thigh points to the cauda equina; astasia abasia, in which the patient is unable to stand or walk, though capable in the recumbent position of performing all movements correctly, may logically be referred to some level higher than the Rolandic cortex. In a case of hemianæsthesia, inability to feel the vibrations of a tuning-

fork on the affected side of the sternum, although the vibrations must be conducted to the normal side, localises the interference to a level at which all forms of sensation from both sides of the body become associated together in kaleidoscopic patterns which are influenced by heredity, training, or the needs of the moment. Let him who doubts consider the simple sensations analysed in judging the direction of the wind by holding up a moistened finger to the breeze, and then ponder over the synthesis of Paganini's amazing execution on the single G-string which held vast audiences spellbound. For the exercise of every function neurones become associated, each centre being guarded by its synapses.

Complex Reflexes.

Where neurones exist reflexes occur, and there is merely an anatomical difference between the mechanism which enables a pithed frog to flick a piece of blotting-paper wet with vinegar from its back, and that which prompts a hedgehog thrown into a pond to curl up until satisfied that no immediate danger threatens before swimming for dry land. When the element of heredity comes into play constant responses to given stimuli merge into instincts (e.g., the migration of eels, on arriving at maturity, to the deepest part of the Atlantic to spawn). Other complex reflexes are of a purely acquired origin. Scott in his novel, "The Pirate," alludes to a seal which flapped its tail to the tune of "Caberfae" and acknowledged none other whatever. A wire-haired fox terrier was always on the alert when his master was about to leave his office; by experiment it was found that the dog, even though apparently fast asleep, recognised the faint click of the lock of a safe as an infallible sign that work was over, and jumped to his feet with every manifestation of eagerness to depart. Pavlov observed that if he regularly rang a bell before a dog's feeding times the sound alone eventually made the animal's mouth water, but under certain circumstances, if food were withheld, the animal fell asleep, showing that other reflexes were inhibited. He termed this a "conditioned reflex." In man, from the time an infant first learns to sleep at the sound of a lullaby, conditioned reflexes of all grades of complexity are being developed, exercised, and lost—one may regard them as psychological units.

An Illustrative Case.

In the case described hereunder the emotions induced by certain surroundings became the signal for the onset of a peculiar disturbance of the ocular muscles.

On March 24th, 1922, a widow, aged 45, complained that suddenly, whilst in church, she had become unable to open her eyes, and had to be led home. In 1902 we had removed the crystalline lenses for high myopia. The vision, at first R. 6/9 with −5·0 sph., L. 6/12 with −1·0 cyl. ax. 180°, by 1912 had gradually deteriorated to R. 6/36, L. 6/15; esophoria 7°. The patient had suffered from ethmoidal trouble complicated by asthma, but resection of the middle turbinals in 1921 had completely cured both conditions.

Condition on Examination.—The lids were found closed as in sleep; when the patient attempted to open them, the forehead became furrowed and the eyebrows arched, but the palpebral aperture did not open, nor was the head thrown back. On raising the lids with the fingers the eyeballs were revealed in a state of extreme convergence, so that images of reflected light fell external to the cornea, slightly above its horizonal diameter. Vision was reduced to hand movements; the pupils were normal and reacted to light.

Suggestion was brought to bear, and to reinforce it a few minims of alcohol were injected into the lids. They soon commenced to rise slowly, the lid last injected lagging behind its fellow; the entire syndrome disappeared and the vision regained its customary acuity. There was a slight relapse on the following Sunday.

On further inquiry it was found to be no mere coincidence that the attacks occurred on Sundays. A memorial service for the patient's soldier husband, killed in the war, had been held at Grimsby; she intended to revisit the town, and the prospect of attending divine service there brought back poignant memories. We urged her by no means to abandon this intention, assuring her that she might make her pilgrimage, if not without sentiment and emotion, at least without fear of loss of sight. She overcame her forebodings, and by acting on this advice gained freedom from further attacks and a new spirit of confidence in the future.

As a rule, the association between a recrudescent emotional tone and an automatic action is set in early life—here the history covered but five years; yet no other relevant psychical experiences were discovered, and the symptom seemed appropriate to the context.

We are not alone in supposing that centres concerned in emotional states may usurp control of the normal channels of communication between the brain and other organs. According to Prof. Hering, "In asthma afferent nerve impulses resulting from certain stimuli produce a reflex contraction of the bronchial muscles and a narrowing of the bronchioles. The reflex may become a 'conditioned' one, and be induced by any afferent impulse resulting from a stimulus which has been associated with its occurrence. The pathways in time are so 'grooved' that the reflex takes place very readily, and is excited by any afferent nerve impulse which has previously been associated with asthma."

The variety of manifestations, if we include the rarer visceral, trophic, and vaso-motor forms, is almost infinite, but Nature protects most jealously the functions on which life itself depends. Among the distinctive properties of the synapses of the higher centres is their relative susceptibility to anæsthetics. The fact that the functions least affected by hysteria are those last affected by anæsthetics, and vice versa, is utilised in the diagnosis of phantom tumour. Complications of hysteria are in a different category; in functional dysphagia, for instance, the unbalanced diet may produce enlargement of the spleen and secondary anæmia, and after restoration of normal deglutition failure of the thyroid to cope with the increased food-supply (Vinson). Medical literature records many instances of organic complications which may ensue when voluntary functions undergo involuntary dissociation from curable causes.

We have described an unusual disturbance of the ocular muscles, impossible for a malingerer to simulate, but possibly modified by the pre-existing state of refraction and muscle balance. Its recurrent onset in response to emotions produced by certain definite surroundings suggests a "conditioned" reflex, and lends support to the hypothesis that centres concerned in emotional states may usurp control of the normal channels of communication between the brain and other organs.

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THE MEDICAL TREATMENT OF CATARACT.

BY INGLIS TAYLOR, M.B., C.M., F.R.C.S. EDIN.,
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FOR years ophthalmic surgeons have been striving to find some means of curing, or at least delaying, the advance of cataract beyond the stage when work must be given up, and financial conditions make its continuance imperative. Until fairly recently I was very sceptical that such a desirable end would be attained, but now I know better. This excellent result is chiefly due to the exertions of Badal and Dor, though many others were working on the same lines.

Badal began with the assumption that cataract was due to a dehydration (sclerosis) of the lens, and used iodine in alkaline solution as a collyrium, and later for ocular baths, with some success. Dor,[1] in 1919, demonstrated that cataract is the result of hydration of the lens, the hydration being due to the

[1] Clinique Ophtalmologique, June, 1919.

fact that the blood contains hydrating ferments, such as occur in the blood-serum of rabbits when naphtholin is ingested, and in the serum of certain diabetics; in both conditions the frequency of cataract is well known.

Calcic-Alkaline Iodide Treatment.

Dor's treatment, therefore, consists principally in adding the dehydrating action of calcium to the lignifying and other actions of iodine. This preparation was still used as an eye-bath until Chauvin, director of Blache Laboratories, brought it out in the form of an ointment, under the name of calcic-alkaline iodide, and in this form it is now used. As a bath it frequently caused irritation, and the treatment twice a day, continued if possible for half an hour each time, was very irksome.

The ointment is in most cases quite painless, and should be so, but like badly mixed hydrarg. oxidi flav. it can be very painful: when pain occurs the tube should be changed for another. Messrs. Rouse and Co., chemists, of Wigmore-street, London, W., obtained a supply of the tubes for me about a year ago, and having given it a fair trial, I am able to express a very strong opinion in its favour.

Naturally, the more incipient the cataract when brought under treatment the more easily is it absorbed, but it must not be thought that only these very early cases are successfully treated. Though strongly commending the treatment, I have had too much experience in operating to have any doubt that absorption is not the treatment for an advanced case, nor is it claimed that the treatment should be used in such cases. All told, I have had about 20 cases under treatment, but all of these cannot be counted as a fair indication of the merits of the treatment, as at first I was inclined to try the effect on cases which were too advanced. Another cause of reduction in numbers, was, I am sorry to say, the want of faith in trying a new remedy, of the medical profession, ophthalmic and otherwise. Patients applied to their general practitioners or through a friend to the friend's oculist, and were informed there was no cure for cataract except operation. They naturally ceased to attend, and now have the weariness of waiting. Of the rest I treated, I now have four or five with full vision, and the others are in various stages of improvement.

The following is a typically good case:—

Mrs. G., aged 59; Sept. 11th, 1923, no cataract visible in right eye, pupil not dilated, V. = 6/6; in left eye cortical cataract, and two of the striæ meeting in the middle, V. = 6/24. Ung. calcic-alkaline iodide ordered for left eye only.

On Oct. 15th, R.V. = 6/6 part c. diff., L.V. = 6/12, all but one letter. Ung. ordered for both eyes.

On Nov. 19th, R.V. = 6/6 a little slowly, L.V. = 6/9, all but one letter.

On Jan. 22nd, 1924, V. = 6/6 all but one letter, each eye quickly, and the last letter after hesitation.

To illustrate improvement, I give other cases.

Miss S., aged 51. July 17th, 1923, cortical cataracts, V. = 6/60 dimly, not improved with glasses. On Sept. 6th, V. = 6/36 dimly and with −2 D. sph. 6/36 clearly. On Jan. 10th, 1924, V. c. −2 D. sph. = 6/12 (2) each eye.

Mrs. K., aged 58. On Sept. 12th, 1923, cortical cataracts. R.V. c. +1·5 D. cyl. 6/12, L.V. c. +0·5 D. cyl. 6/9. On Nov. 27th, c. above R.V. 6/6 (3), L.V. 6/6 all.

Miss B., aged 64. On Sept. 17th, 1923, early cortical cataracts, c. + 1 D. sph. and cyls. V. = 6/6 slowly. On Jan. 31st, 1924, c. above V. = 6/5 (3) each eye.

Mrs. A., aged 48. On Oct. 29th, 1923, cortical cataracts. R.V. c. +1 D. cyl. = 6/9, L.V. c. +0·5 D. cyl. = 6/6 a few. On Dec. 7th, 1923, c. above R.V. = 6/6 a few, L.V. = 6/6 all.

Mrs. J., aged 73. On Nov. 15th, 1923, irregular cataracts. R.V. < 6/60, L.V. c. +0·5 D. sph. = 6/12. On Jan. 11th, 1924, R.V. < 6/60, L.V. c. above several letters of 6/6.

In another case, an old lady, aged 82, with advanced cataract in left eye, early nuclear in the right eye. V. = 6/6 part and after treatment = 6/5, so age is no impediment to treatment.

It is claimed that the treatment overcomes the opacity of the lens, sometimes for a considerable period, but at present it seems to me that to retain normal vision a fortnight without treatment is long enough at a time.

Clinical and Laboratory Notes.

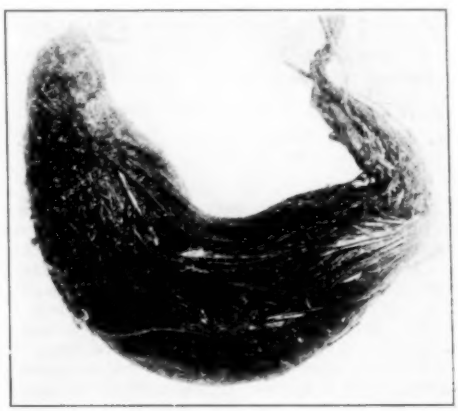
A CASE OF "HAIR-BALL" IN THE STOMACH OF A TEN-YEAR-OLD GIRL.

BY GERTRUDE M. A. HERZFELD, M.B., F.R.C.S. EDIN.,

ASSISTANT SURGEON, ROYAL HOSPITAL FOR SICK CHILDREN, EDINBURGH; SURGEON, EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.

THE following case is, I think, worthy of record:—

A girl, aged 10, was sent into the Royal Hospital for Sick Children by her doctor in Aberfeldy, who stated that following an attack of jaundice in spring, she had become emaciated, complained of pain at the umbilicus and of inability to take food. The history given by the mother before operation was brief and to the above effect; the child was evidently going rapidly downhill. No family history of tuberculosis. No serious illnesses.



"Hair-ball" of grass, reeds, string, cotton, and hair, removed from the stomach in the case described.

Condition on Examination.—Patient was a well-grown but rather emaciated girl; she was very shy and reserved and answered questions with reluctance. Asked to show the site of any pain she always pointed exactly to the umbilicus. The abdomen moved freely and showed no distension. On palpation the upper parts of both rectus muscles appeared to be somewhat resistant, but there was no true rigidity and no pain was elicited on pressure. There was no tenderness over the cæcum or kidneys and no enlarged mesenteric glands could be made out. The urine on centrifuging showed an occasional pus cell and red blood cell, but not sufficient in any way to account for the patient's condition. No definite diagnosis was made; the possibilities of appendix dyspepsia and T.B. mesenteric adenitis and Meckel's diverticulum were considered. Laparotomy was advised as the child was evidently ill and going downhill.

Operation.—Laparotomy was performed on Sept. 13th, 1923. A right rectus incision 3 inches in length with the centre just below the umbilicus was made. The cæcum and appendix were sought for first and found to be healthy. There were no enlarged mesenteric glands and no Meckel's diverticulum could be found. On passing the hand into the upper abdomen a hard mass, lying transversely across the middle line, was felt above the umbilicus; it felt very like a leather-bottle stomach. The incision was enlarged for two inches upwards and the greatly distended stomach presented, containing a hard tumour, in shape and size somewhat like a double banana, which completely filled the stomach and passed into the first part of the duodenum, also greatly distended.

A horizontal incision was made in the anterior wall of the stomach and the tumour as depicted in the photograph was removed. It was seen to consist of grass, reeds, string, cotton, and hair, inextricably mixed into a solid mass. A piece of string passed from the tumour into the duodenum and had to be cut. The opening in the stomach was closed by two layers of catgut and the abdominal wall was sutured.

The child was not upset by the operation, and apart from being highly excitable and almost hysterical for the first two days, she made an uninterrupted recovery and was discharged on the twenty-first day much improved in general health.

Details of History.—Following the operation the mother was interviewed again, and a much more detailed and more enlightening history was obtained, the salient points of which were: From the age of 3 the child had been very nervous and easily frightened. She went to school at the age of 6, but disliked and feared the teaching. She became more nervous, and even the passing of a horse and cart on the road to school terrified her. She was very sensitive and very affectionate and always wanted to be by her mother's side. A year before admission her mother noticed that she was always chewing whatever she had in her hand—chiefly sticks. She was reprimanded for this habit. Shortly after she began to bite her nails and then to chew her hair. On account of this latter habit her hair was cut short. Her mother tried to cure her of these habits, but never at any time realised that the child was swallowing any foreign bodies.

A CASE OF PERSISTENT PRIAPISM.

BY HERDMAN PORTER, M.B., CH.B. EDIN.,
SURGEON TO THE COTTAGE HOSPITAL, FAVERSHAM.

With Notes on the Surgical Treatment by

R. H. JOCELYN SWAN, M.S. LOND., F.R.C.S. ENG.,
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Hinman[1] states that only 170 cases of persistent priapism have been recorded in the whole medical literature and reports two new cases, both in coloured men. He states that the pathogenicity is varied and obscure, and that, as a rule, the priapism responds to no form of treatment. Woolburton[2] reports a case associated with masturbation, and Cowie[3] records one complicating myxosarcoma of the scrotum. G. W. Theobald[4] reports a case associated with myelogenous leukæmia, and Sullivan[5] records one very similar to the case here reported. The following is an account of my case:—

In the early morning of August 27th, 1923, I was called to see an unmarried man, aged 47, who was suffering from persistent priapism and difficulty in micturition.

Previous Illness.—Typhoid fever at age of 28. No history of syphilis or gonorrhœa. At age of 25 he stated that he had a painful erection lasting six to eight hours. No recent accident.

Present Illness.—Began at 5 A.M. on the previous morning, the 26th, when he was wakened by a violent and painful erection, and found that he could only micturate with difficulty. There had been no recent coitus or history of injury to the penis. He went about as usual during the day, including a cycle ride of two miles, the discomfort being bearable. The erection undiminished when he went to bed. As he did not sleep and had increased difficulty in micturition, he sent for me at 5.30 A.M. on August 27th.

Condition on Examination.—Penis in extreme erection, resting on suprapubic region; any attempt to raise it caused severe pain. Corpora cavernosa very firm on each side, and could be traced easily along the pubic rami as rigid, elongated swellings. Glans penis not swollen in proportion. Dorsal vein of penis not distended; no œdema of prepuce. There was absence of sexual desire. Pulse 78. Temperature 98° F. Examination per rectum revealed nothing abnormal, the prostate and vesicles being normal. Neither liver nor spleen palpable in abdomen, and heart and lung sounds normal. No paresis in legs and knee-jerks; plantar and cremasteric reflexes normal. Cutaneous sensation normal in penile and perineal areas. Pupils reacted well to light. No urethral discharge and no enlarged glands palpable in inguinal, femoral, or iliac groups. Scrotum and testes normal. Urine acid, sp. g. 1025, with a deposit of urates. Albumin and sugar absent.

Blood examination: hæmoglobin, 90 per cent.; red blood corpuscles, 4,700,000 per c.mm.; white blood corpuscles, 12,600 per c.mm.; colour index, 0·9. Wassermann reaction, negative.

Progress and Treatment.—The increasing difficulty in micturition due to the persistent erection was relieved by frequent hot baths, often four times a day; but all treatment was ineffectual in reducing the erection. Pain in the penis, especially at the penoscrotal junction, became increasingly severe, and on Sept. 7th the whole penis was becoming discoloured and assuming a dull livid hue. Fearing commencing gangrene of the penis, I had the patient removed to a nursing home.

At this stage I asked Mr. Jocelyn Swan to see the patient with me, and the following notes are supplied by him:—

"Finding no physical cause for the condition, it was decided to try the effect of cutting off any central stimulus by means of intrathecal anæsthesia. Lumbar puncture was made between the third and fourth vertebræ; the cerebrospinal fluid was clear and under no tension. Intrathecal injection of stovaine and glucose was made. Complete muscular relaxation of the legs with anæsthesia to the level of the umbilicus was obtained, but there was no diminution in the rigidity of the penile erection. It was therefore decided to operate and to incise the crura in the perineum rather than the penile corpora cavernosa. The legs were raised into the lithotomy position, and the perineal surfaces shaved and cleaned with iodine, &c. An incision was made obliquely downwards and outwards on the left side over the pubic ramus and the erector penis muscle exposed and incised; the crus penis was much thickened. This was incised in the line of the wound, when dark, semi-clotted blood slowly exuded. By pressure on the crus and on the penile corpora cavernosa a quantity of the same viscid dark blood was expressed, assisted by the passage of closed forceps into the crus in a forward direction. A similar procedure was adopted on the right side, the same dark blood being expressed, when the whole penis became quite flaccid. A small drainage-tube was passed into each crus and the wounds lightly sutured. No incisions were necessary into the penile corpora cavernosa, the incisions into the crura being dramatically effective in entirely relieving the tense erection."

Subsequent History.—After the operation the penis remained flaccid and the condition was entirely relieved. The difficulty in micturition was also overcome. A moderate amount of bloody discharge continued for a few days, but the wounds healed well, and the patient left the home in 28 days. He has had no return of the priapism, but states that he gets an erection, though the erect penis is drawn to the side. He has had three nocturnal emissions.

Remarks.

I can offer no explanation of the cause of the persistent and painful erection. In the absence of leukæmia, venereal disease, disease of the nervous system, and of trauma, I think that the case must be called one of "idiopathic" priapism in which nothing short of operative interference was of any avail. The cause of the thrombosis in the corpora cavernosa and crura of the penis remains obscure. The immediate relief obtained by direct incision into the crura of the penis in the perineum, followed by the expression of a quantity of dark, semi-clotted blood, points to the treatment to be adopted in future cases, even though true erection may be subsequently affected by the operation. The failure of intrathecal anæsthesia to reduce the erection suggests that the cause must be looked for in the vascular rather than the nervous structures. In some cases, quoted by Jacobson in "Diseases of the Male Organs of Generation," operative measures were directed to the relief of coincident paraphimosis and to direct incision of the penile corpora cavernosa; it would appear that direct attack upon the crura is preferable.

[1] Annals of Surgery, 1914, lx.
[2] Medical Record, March 31st, 1917.
[3] American Journal of Dis. of Childr., 1920, xx.
[4] THE LANCET, 1922, ii., 405.
[5] Buffalo General Hospital Bulletin, April, 1923.

EUGENICS EDUCATION SOCIETY. — On Friday, April 11th, at 8.30 P.M., in the rooms of the Royal Society, Burlington House, Piccadilly, W., Mr. W. T. J. Gun, of the London Society of Genealogists, will lecture on Studies in Hereditary Ability. Major Leonard Darwin will take the chair. Members of the Society and all interested in the above subject are invited to attend.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF COMPARATIVE MEDICINE.

COMPARATIVE PATHOLOGY OF CAPTIVE ANIMALS AND MAN.

AT a meeting of this Section held on March 26th, with Sir LEONARD ROGERS in the chair, a discussion was held on the above subject.

DR. N. S. LUCAS read the opening paper and showed a number of specimens and microscopic sections from animals in the London Zoological Society's Gardens. The subject, he said, was much wider than a comparison of such diseases as tuberculosis, glanders, anthrax, in man and animals, or the relation of small-pox to ordinary cow-pox. The study of this comparative pathology had been so far poorly developed, largely because, so far as he knew, the Zoological Gardens in New York and London were the only ones where post-mortem examinations on the animals which died were systematically carried out and the results recorded. The study was further hampered by the dearth of knowledge concerning wild animals in their normal state; even the process of rumination in domestic animals was but imperfectly understood.

Effects of Captivity upon Animals.

Captivity must exercise a great influence on the lives of animals, sometimes in shortening life, often in lengthening it. In contrast to "a man is as old as his arteries," it could be said that "an animal is as old as its teeth," for when its teeth are worn or otherwise useless it can no longer defend itself or procure food. But the captive animal had its food found and if necessary prepared for it, and could take it without molestation; its life was by this means prolonged. A long course of unnatural diet in captivity would tend to shorten the normal life by lessening the animal's resistance to any infection which might attack it. The natural span of life of various wild animals was not known; by a process of ringing nestling birds and instituting a system of reporting their appearances it was hoped to acquire that knowledge concerning birds, but there were difficulties in the way of applying this to animals. To some animals, petting and attention seemed a necessity; an example of this was the marmoset, which did not live long in institutions; at the "Zoo" the usual life of this creature was about six months, but private owners could keep them in their houses three or four years. Another excellent example was the gorilla.

Diseases of Captive Animals.

In the Zoo there was a practical absence of those diseases which in man and domestic animals resulted from work or the strain of over-stimulated reproduction. Though man suffered from many diseases to which the captive animal was not subject, the captive animal had some which were not fatal to man. In man, inanition was equivalent to starvation, but in the Zoo it meant that the animal continued to eat, but did not receive benefit from the food, was deficient in body-fat, and died. "Senility" in these animals usually meant granular kidney, atheroma, congestion of the lungs, perhaps cirrhosis of the liver. A condition unparalleled in man was the presence of white laminated concretions in the stomach of the porcupine. Analysis of one of three such masses showed an organic origin; it was insoluble in acids, and was apparently made up of smaller amounts of indigestible vegetable substance; there was no sulphur found in it, and no cause for the indigestibility was discovered. Acute specifics, including syphilis and gonorrhœa, were absent in the captive animals; whether they suffered from the anæmias was difficult to ascertain, as it was almost impossible to obtain blood for examination, though leukæmia with splenic enlargement could be diagnosed, and there was one very probable case of this on record. Hodgkin's disease had not been recorded at the "Zoo," neither had acute rheumatism, and endocarditis was very rarely met with, though he had seen a severe case in a monkey.

Malignant disease was moderately rare in these animals, but not because the animals were too young for that disease to manifest itself. Carcinoma of the thyroid was fairly frequent in dogs, and in the Zoo wolves, jackals, and wild dogs had been affected with it; he had seen carcinoma of the testis in a green Australian love-bird. Melanotic sarcoma of the suprarenal occurred in the antelope, and sarcoma of the palate has been detected in an ostrich, and when death eventually ensued there was a secondary growth in the intestine. There had been no case of sarcoma or carcinoma among the apes and monkeys in the "Zoo" for 20 years. The nephritis in these animals was most commonly of the acute kind, but the small white and granular kidneys had also been found. He had never seen a case of cerebral hæmorrhage among these animals. Pleurisy, other than of tuberculous origin, was very rare in them, but empyema was not uncommon. Bronchitis was not an especially common cause of death, but when the lungs became congested the effect on the health was marked, for the animals had but small resistance to pulmonary infection, a fact which Dr. Gaskell, at Cambridge, had amply confirmed. Confined animals also showed but feeble resistance to inflammatory conditions in the alimentary tract, though this was not noticeable since greater attention had been bestowed on cleanliness. Among these animals he had never seen a case of tuberculous meningitis, nor a mammal with a tuberculous joint, but he had seen a dove with both knee-joints involved in this disease. Tuberculous disease of genital organs was very rare; he had seen a case of tuberculous epididymitis in a monkey, and one in a bird.

In conclusion Dr. Lucas said many more years must be spent in accumulating facts on this subject before an attempt was made to build theories, but he hoped others would follow their own special lines of inquiry, and so help to further human pathology from this standpoint.

Prof. G. H. WOOLRIDGE, speaking as a veterinarian, said that the epizoötic diseases were rare in "Zoo" patients mainly because they were kept in semi-isolation, apart from the careful quarantine insisted upon in the case of fresh arrivals. It must be remembered in regard to epizoötics, especially of a catarrhal nature, that they were specific to the particular species; he did not think there was any close relationship between the serious contagious catarrhs of the different types of animals, though many of them had features in common. For example, a disease resembling distemper in the dog was met with in the cat, but there was no evidence of intercommunication; another instance was the influenza of the horse, which was much like that of man, yet here again no intercommunication had been established, though attendants on such horses might have catarrh at the same time. Most of the cases of tuberculosis in the "Zoo" had been found to be due to the bovine strain of the bacillus. It had often been said that the tuberculosis suffered by parrots was of human origin, and that raised the question of danger to the members of a family in which such a parrot had its home. He had no data to offer on that, but hoped some would be forthcoming, because of the importance of the risk. Both tuberculous meningitis and tuberculous arthritis were common in domesticated animals; in most of the cases he had seen it had been congenital, though sometimes the disease was not manifest until a year after birth. The absence of anthrax from "Zoo" animals was due to the manner in which they were kept; in domesticated animals the disease was due to the eating of meal cakes which had been contaminated with hides in the ship or during subsequent handling. There was no doubt about the feeble resistance to lung conditions in these animals, and the bad results were aggravated by the fact that the patients had no power to communicate the fact of their illness until

it was very advanced. Horses the subjects of contagious pneumonia often continued to feed for some time, and only a systematic examination of the stud revealed the state of affairs. If a victim of the condition were put to work, the result was always fatal. The comparative absence of malignant disease in wild animals in captivity was a matter of comment, for many of the "Zoo" denizens had lived beyond the age at which domesticated animals developed cancer. In dogs he had seen only two cases of malignant disease in the alimentary tract; one was sarcoma of rectum; in the other secondary growths followed carcinoma in the glands at the anal margin. In domesticated animals nervous diseases were very common, sometimes sufficient to cause death, yet careful post-mortem sectioning gave no result. If careful inquiry were pursued as to this in the dog, it might result in valuable knowledge concerning the human.

Mr. HUMPHREY NEAME said a small piece of the third eyelid of a horse was sent to him by a veterinary surgeon to examine. It showed a thickening of epithelium, and he could not decide whether it was papillomatous or carcinomatous, though he suspected the latter. Four months later an ovoid mass three-quarters of an inch long and nearly as wide was sent to him, with the report that it was a recurrence. This was definitely squamous and prickle-celled carcinoma. The two eyes of a kitten sent to him had tuberculosis, mainly of the choroid, the animal having been killed because of blindness. Two months later a second kitten from the same litter, which had been living in a different place, was losing its appetite with lessening visual power, and was sent to him alive. He found tuberculosis in the choroids and disseminated over the body, viscera, and lungs; the brain was not examined.

Dr. M. J. ROWLANDS said he had been informed that the pig was the only animal which could be infected with aviary tuberculosis, and he thought, therefore, that the latter could also infect human beings. He advised that pigs and chickens should not be kept in proximity on farms, and narrated his experiences with chickens fed on foods rich in vitamins. By giving his pigs runs in a wood and feeding them on foods with a vitamin A content he had abolished tuberculosis from one farm entirely. Tuberculous pleurisy he had found to be the commonest cause of death in the pig.

General Sir JOHN MOORE spoke of an Australian opossum which he had found on the floor of its cage paralysed, and which was found riddled with tubercle, the lungs and pleura being especially invaded.

Mr. HAMILTON KIRK said that some years ago he was called to treat a parrot, and it was not long before it died from tuberculosis. On inquiry, he found a member of the household had been in the habit of getting the bird to take food out of his mouth. He also spoke of some 80 poultry having died following a tuberculous visitor expectorating in the fowl-run, from which he inferred that they suffered from human tuberculosis.

Prof. HOBDAY expressed his surprise at the comparative absence of malignant disease in "Zoo" animals, as many of them lived to a good old age. With regard to Mr. Neame's remarks, veterinarians recognised that when there was a small tumour on the membrana nictitans it was most likely to be carcinoma, and, however carefully the first growth was removed, recurrence would ensue, and the animal would ultimately have to be destroyed.

Mr. G. H. LIVESEY spoke of the increased lung resistance to disease in animals which could run long distances, like the dog, as contrasted with the cat, the latter showing very little power to fight a lung infection. Apart from traumatism, he believed every case of pleurisy was tuberculous. Often tuberculous disease in the cat was first seen in the eye—i.e., keratitis, or detachment of retina, or dislocation of the lens probably preceded general emaciation. Mr. Henry Gray had declared that of all birds the parrot was most liable to have human tuberculosis.

The CHAIRMAN said post-mortem examination had now been instituted on animals which died in the Calcutta "Zoo." Aspergillus affecting the ears was very common in the hot rainy season in India. He referred to a discussion to be held on tuberculosis as met with in medical and veterinary practice as one of obvious importance. He agreed that the variety of tuberculosis affecting the monkey seemed to be the human.

Dr. LUCAS briefly replied.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society was held at the rooms of the Medical Society of London on March 28th, Colonel L. W. HARRISON, D.S.O., the President, being in the chair.

GONORRHŒA: INFECTION BY SECONDARY ORGANISMS.

Colonel E. T. BURKE opened a discussion on this subject, confining his attention to the male urethra. He said knowledge of the bacteriology of the urethra in general, and of the gonococcus in particular, was not yet so accurate as to warrant dogmatic statements concerning secondary infection. The subject bristled with problems for the pathologist and clinician; truth was not always to be found at the bottom of a test-tube nor on the microscope stage. Sometimes the clinician accepted without question laboratory findings even though they seemed to contradict clinical experience. Laboratory findings had again to pass through the ordeal of clinical experience before acceptance. Where experiment ended speculation began: it was the finger-post to further research.

Symbiotic and Parasitic Organisms.

The view that the healthy body was sterile he regarded as erroneous; it was responsible for the conclusion that whenever the bacillus *x* was obtained from the tissues or fluids of a sick body, the patient was suffering from *x*-itis, and treatment was focused on the elimination of bacillus *x*. Should there be no symptoms, he was designated a "carrier." He agreed with Mr. Frank Kidd in regarding the body as a "bacterial sponge," that certain organisms were naturally symbiotic to the body, and that periodically, and without causing disease, these invaded the blood-stream. Such a conception was necessary to an understanding of the processes of infection and immunity. Some of the organisms, such as the Neisserian gonococcus, were not symbiotic, but parasitic, and their entry aroused resistance, shown first by inflammation. Some of them, such as the pneumococcus, *B. influenzæ*, *B. diphtheriæ*, may become naturalised citizens, losing, or concealing, their undesirable characters. The normal, or naturalised, bacterial inhabitants of any part of the body might, under some stimulus or some indiscretion on the part of the patient, "see red" and become offensive. Conversely, such might settle down and even function for the common good.

Among the organisms which had been recovered from the healthy male urethra were three varieties of staphylococci, diphtheroid bacilli, micrococcus subflavus, streptococci, *B. coli*, and Gram-negative diplococci, not gonococci. He did not agree that any organisms found in the urethra had entered by the meatus; his view was that the organisms which lived on the skin and mucous membranes and in the bowel entered the blood-stream via the lymphatics, and were again got rid of by the various glands, such as the kidney. This intermittent invasion of the blood-stream was the basis of our immunity to these organisms, and it was only when the general or local resistance was lowered that there occurred a rigor, headache, lumbago, or osteomyelitis. As the normal urethra had a bacterial flora, he did not see how an aseptic urethritis could occur. When the urethra was injured, the flora found in the injured area an added stimulus to growth and activity, their character changed, and they took on

an enhanced virulence. The gonococcus might cause the initial damage, but even after the disappearance of that organism the damage might to a certain extent persist, and on it the other organisms might flourish. If local treatment was pushed too vigorously, this, by increasing the urethral damage, might do more harm than the actual presence of microbes. The possibility of organisms which were saprophytic to the prepuce, glans, and fossa navicularis being driven up the urethra and flourishing there was a very remote one.

Polymorphism in Bacteria.

With regard to the gonococcus itself, owing to the readiness with which it "digs itself in," it seemed hopeless to expect to eradicate the disease completely by local measures alone; the entertainment of such a hope seemed to be responsible for the disease becoming chronic and for the supervention of secondary infection. He believed that the main element of success in the irrigation treatment in the case of the male was that of the mechanical cleansing, but until chemical agents were available which were both fatal to the gonococcus and harmless to the cells of the urethral membrane, the irrigation treatment would be fraught with much danger in the hands of those who aimed at a rapid cure. Vaccines, sera, the injection of some of the metallic elements in a colloidal state, seemed to be on the correct lines; the important thing was to discover a colloid which had a distinct affinity for the gonococcus. Frequently the bacteriologist was unable to recognise the gonococcus on morphological grounds; the organism in culture showed a marked tendency to deviate from the normal in size, shape, grouping, and staining properties. This could be seen in a 24-hour culture, and at the end of four days the culture would exhibit very few normal gonococci. There thus seemed to be a gradual devolution from the Neisserian gonococcus to the simple coccus, or an evolution in the opposite direction. Many of these variant forms did not differ materially from those found in urethral smears and labelled "secondary organisms." It was very important to know whether these organisms, in whole or in part, were really metamorphosed gonococci, and whether, when receiving the needed stimulus, they would again develop the characteristics of the typical gonococcus. From prolonged residence in the urethra the latter may markedly diminish in virulence, but on conveyance to the healthy female genitalia may resume their pristine malignancy, and the reinfection thence of the infecting male may re-establish the virulent disease in him. Possibly the Neisserian gonococcus was a descendant from one of the normal inhabitants of the genital passages.

Dangers of Over-Treatment.

He emphasised the fact that there were great difficulties in the way of treating gonorrhœa, and laid stress on the importance of early treatment and the avoidance of over-treatment. He believed that, given proper treatment, secondary infection should not occur, and that the main cause of the latter was over-treatment. Gentleness in treatment was necessary, and the urine should be rendered dilute, alkaline, and copious, non-irritating alkaline fluids being used. The protective forces must be stimulated by vaccines. When a secondary infection had occurred, an attempt to beat it out was usually futile and would establish a vicious circle, for it devitalised the urethral mucous membrane and seriously lowered the resistive power. A six months' cessation of all treatment would sometimes prove more beneficial than anything else. The urethra should not be tortured in an attempt to sterilise it.

Serum Treatment.

Miss FRANCES IVENS related her experiences at the Morley Hospital, Liverpool, where most of her patients were "respectable married women." In the out-patient department there the incidence of gonorrhœa was 14 per cent., while 24 per cent. of the cases admitted for operation had the infection; 30 per cent. were sterile. Latent cases exhibited a tendency to become acute at the puerperium, or after such an operation as dilatation for sterility. She questioned the wisdom of keeping the woman in ignorance of the nature of her disease. She favoured confidential notification of the disease to the public health department. Her experiences in the war in France brought her into contact with the work of the Pasteur Institute, and what she saw encouraged her to try the effects of a gonococcal serum when she returned to her work in Liverpool. When she resumed there, in 1919, she found that the incidence of gonorrhœa among the patients at the hospital was even higher than before, in spite of the propaganda work which had been done and the clinic which was founded. She used Nicolle's serum on 50 patients, mostly cases with salpingo-oöphoritis with pus formation. Used on packs for the vagina the results were good, but it was not an economical method. She opened both tubal and ovarian abscesses, then injected 10 to 20 c.cm. of serum into the tubes, and left the residue in Douglas's pouch. Rectal salines were also given. In later cases she used the serum subcutaneously, in combination with surgery as before, and she was more satisfied with this method than with any other. Sodium chloride had been found to have a protective action against disturbances following the injection. She did not use it intravenously, as she had seen fatal anaphylactic shock follow it. The after-history of the patients so treated had been very satisfactory; several had since borne children. Though this serum treatment was curative it could not be regarded as prophylactic when the patient continued to be exposed to reinfection. She narrated some cases in which the treatment in severe cases had yielded excellent results. At present there did not seem to be an antitoxic serum available. MM. Dubois and Minet suggested that efforts should be made to obtain serums very rich in antibodies, and the speaker thought much progress would follow the preparation of an antitoxic serum which could be used locally.

Dr. MARGARET RORKE agreed with Colonel Burke concerning the morphological changes seen in gonococci; sometimes they looked more like staphylococci. If the patient was in fair health, then, apart from the menstrual period, the gonococci seemed to subside in a remarkable way.

Dr. T. G. WRIGHT spoke of cases, rebellious to ordinary treatment, which had cleared up under diathermy.

Dr. FOWLER WARD said that, with regard to the male, if he got a negative result with the urethroscope and after prostatic massage he regarded the case as cured. The real test, which could not be instigated clinically, was when the man could practise coitus without imparting the disease to his healthy partner.

Dr. H. BARDSLEY said he had found that cases of secondary infection cleared up very well with prostatic massage and the injection of autogenous vaccines. In chronic gonorrhœa he did not think the prostate was usually sufficiently treated.

Dr. B. B. SHARPE agreed that as the gonococcus might gradually assume different types the difficulty of diagnosing when an infection was secondary was enhanced. He referred to the stubborn nature of sago-grain urethritis in patients who had not gonorrhœa nor a history of it. Cases of diphtheroid infection in children were also very resistant.

Dr. A. H. HARKNESS spoke of his success in washing out the urethra with a 1 in 4000 oxycyanide of mercury solution or potassium permanganate.

Dr. Z. KADINSKY said he had not had a case of secondary infection in his cases since he carried out irrigation with plain water. He agreed that cessation of treatment was beneficial in cases of secondary infection.

Mr. C. MYERS, alluding to the statement that organisms were always present in the male urethra, said he was constantly receiving hospital reports that there were no organisms, but only a few epithelial cells, and asking that prostatic massage might be done.

The PRESIDENT said he believed there was a growing scepticism concerning pathologists' reports, and when he encountered this he asked whether the specimens had been taken properly. Often they were taken in such a way that the pathologist could do nothing with them. There was certainly room for more coöperation between pathologist and clinician. He had often been in doubt whether the Gram-negative bacilli on a slide were gonococci or not; for that reason he was inclined to adopt the cultural method. If the doubtful organism could be grown on an ordinary medium it went far to negative it being gonococcus, as the latter was very particular about its medium. He did not believe that secondary organisms were natural inhabitants of the whole urethral canal, but multitudes could be found in its first centimetre. In many cases saprophytes grew and set up a mild urethritis because the ground had been prepared for them by the gonococcal infection. Strong enough chemicals might not be used in treatment to turn them out. Stronger solutions than 1 in 4000 oxycyanide of mercury, short of caustic, might succeed. He had had success with 5 per cent. mercuriochrome. Failure to take aseptic precautions was responsible for many cases of secondary infection. Diathermy was very effectual in clearing up prostatic infection.

Reviews and Notices of Books.

MENTAL DISORDERS.

An Introduction to the Study of Mental Disorders. Second edition. By FRANCIS M. BARNES, jun., M.A., M.D., Associate Professor of Nervous and Mental Diseases in the St. Louis University Medical School, Neurologist to St. Mary's Hospital. London: Henry Kimpton. 1923. Pp. 295. 18*s.*

THE outward features of mental disease receive here less attention than is usually expected in a students' manual, and practically no illustrative cases are described. An unduly large amount of space is devoted to the theoretical considerations on which the practice of psychiatry is based, and these sections are written in such a way that they could well be compressed without detracting from their value, or reducing the amount of information they contain. There is, in fact, a singular lack of positive and detailed information throughout the book; the section on paranoia, for example, contains no description of this disease whatever, but consists merely of a discussion as to the proper scope of the term, a well-worn controversy with which a student ignorant of the very nature of the disease need scarcely concern himself. The remarks on treatment are very brief. No mention is made of the use of alcohol in delirium tremens. No attempt is made to adjudicate on the sphere of modern psychotherapy. The author's simplified classification of mental disorders is more intelligible than many that have been put forward. Some of the words and expressions used are unfamiliar; if brevity be the excuse for "pathologic," why "symptomatologic" rather than "symptomatic"?

Dr. Barnes's book is intended primarily as an adjunct to his own clinical teaching at St. Louis, Missouri. Presumably his students are able to gain a considerable amount of clinical experience, for without this they are unlikely to derive much benefit from his book, which is indeed more suitable for advanced readers.

FIFTY YEARS OF MEDICAL PROGRESS, 1873–1922.

By H. DRINKWATER, M.D. Edin., M.R.C.S. Eng., F.R.S.E. London: H. K. Lewis and Co., Ltd. 1924. With 37 illustrations on 35 plates. Pp. 183. 10*s.* 6*d.*

IN the preface to this record of 50 years of medical progress Dr. Drinkwater reminds us how many subjects that in 1873 were shrouded in seemingly impenetrable mystery have yielded up their secrets. In 1873 very little was known regarding germs in relation to disease; in fact, the term bacteriology had not been introduced. In surgery the carbolic spray was in the height of its popularity, while since X rays had not been discovered the treatment of fractures rested on a less certain basis. During the period under review the whole aspect of medicine has been changed. Diseases (for example, malaria and yellow fever) which have been widespread scourges have been partially, and in some places completely, eradicated; surgical operations that were definitely stated to be unjustifiable are now performed successfully every day in the great hospitals all over the world; parts of the body that were looked upon as vestiges of some former age are now known to be of importance, the net result being the relief and prevention of much suffering, the conferring of immunity to certain diseases, and an increase in the expectation of life by several years.

The alphabetical arrangement of the subject-matter is commendable, but since dates form the subheadings it is unfortunate that discoveries and advances are not chronicled in orderly sequence. It is disconcerting, for example, on. p. 93 to find a series of haphazard paragraphs in the order 1881, 1891, 1877, 1874, 1884, 1910, 1876, whereas with a little care in arrangement they would have told a connected story. There are a few regrettable gaps. Under diabetes a reference to the discovery of insulin is to be found, but the most recent entry under cancer is 1903. The book will be useful as a work of reference, and to revive the failing heart of pessimists who see only the fields untilled in medicine and are blind to the progress already made. Among the illustrations are pictures of 25 men whose original work has marked special stages in the progress outlined.

HAND-ATLAS OF HUMAN ANATOMY.

Fourth edition in English. By WERNER SPALTEHOLZ. Edited and translated from the seventh German edition by LEWELLYS F. BARKER. With a preface by FRANKLIN P. MALL. London and Philadelphia: J. B. Lippincott Company. 1923. In three vols. Pp. 902. £3 10*s.*

Spalteholz's Anatomy requires no introduction to the English student of anatomy, and his congratulations, as well as those of all who may have occasion to use this beautiful edition, are due to Prof. Barker and all concerned on the results of their efforts. Even one who is not by any means convinced of the value of "atlases" must perforce praise the exquisite illustrations which make up the bulk of the volumes. It would be but captious criticism to point out certain little details in which we cannot see eye to eye with the original delineator, but the attention of the editor might justly be drawn to the large coloured representation of the fundus oculi. It cannot be said definitely that the condition shown is an example of cerebro-macular trouble, but there can be little doubt that the darkly pigmented macula is not normal, but degenerative; in many respects it would be of advantage to substitute for this figure another fundus in a simpler style. The late Prof. Franklin P. Mall, who wrote the original English preface, was a declared believer in anatomical atlases. Our faith is not so clear and unquestioning. But no one could have hesitation in putting this great production among the books that count.

PAPERS AND ADDRESSES IN SURGERY.

By R. HAMILTON RUSSELL, F.R.C.S., Associate of King's College, London; Consulting Surgeon to the Alfred Hospital, Melbourne. Melbourne: Allen Grant. 1923. Pp. 452.

THIS is a selection from the author's writings of the last 25 years. Various subjects are dealt with, but two stand out as particularly associated with his name. They are the origin of hernia and the treatment of fractures. It is interesting to read again the steps which led to the evolution of the saccular theory of

hernia. Much of the reasoning we know now to be sound, but the acceptation of the hypothesis for the origin of femoral hernia without reserve is rendered difficult by the consideration of facts brought against it by other observers. Further study is needed before surgical opinion can become unanimous on this subject.

The same originality in outlook is evident in Mr. Russell's observations on the principles which should govern the treatment of fractures. He insists upon the necessity for the limb being in the natural position of rest, for in this position alone are the muscles so disposed that there is no tendency to incorrect alignment. His methods of treating fractures of the femur and leg are appealing in their simplicity and it would seem in their effectiveness. Yet their application is an art and requires daily supervision. It is much to be desired that the author's advice to withhold passive movements for fractures near joints, especially in children, should be more widely adopted. There is an original method for dealing with intractable stricture of the urethra in another section of the book, and an account of the first recorded case of the removal of a pin from the lung by open thoracotomy. The inspirations which have guided the author through a strenuous surgical life may be gathered from the Presidential Address in Surgery at the 1914 Australasian Medical Congress. It is a delight to read, as it must have been a pleasure to hear.

UROLOGY.

Endoscope operatoire des voies urinaires. By E. PAPIN, Ancien Chef de Clinique de l'Hôpital Necker, Chirurgien adjoint de l'Hôpital Saint-Joseph. Paris: A. Maloine et Fils. 1924. Pp. 110. Fr.26.

THIS manual treats of operations which can be carried out upon the posterior urethra, bladder, ureter, and kidney through the cystoscope and cystourethroscope. All procedures described are done through prismatic cystoscopes, the direct instruments being only referred to here and there. The author gives a very good description of the various established endovesical procedures, and makes frequent reference to the work and methods of American surgeons. He does not seem to be acquainted with the ingenious retrograde cystoscope of Mr. Swift Joly, by means of which lesions at the bladder neck can be reached. A strong advocate of endoscopic methods, he yet realises their limitations, and recommends resort to open operations when necessary. His treatment of the tuberculous bladder after nephrectomy, by diathermy, is apparently new, and seems to give good results. The numerous diagrams in colour and black and white are beautiful representations of appearances seen through the cystoscope, and depict very clearly the methods employed.

CLOUDS AND SMOKES.

The Properties of Disperse Systems in Gases and their Practical Applications. By WILLIAM E. GIBBS, D.Sc., Chief Chemist to the Salt Union, Ltd., Liverpool. With a Foreword by Sir OLIVER LODGE, F.R.S. London: J. and A. Churchill. 1924. Pp. 240. 10*s.* 6*d.*

WE shall probably not be content to neglect clouds and smoke in our big cities as we have in the past; they are too costly in two respects—human life and coal. It is known that town fogs are due to incomplete combustion of coal, mainly in the domestic grate; with improved methods of burning we should still have mists, but, owing to the greater temperature of towns, these would probably not be so frequent as in the country districts. Legislation in these matters is very slow here; not so in America, for Pittsburg has apparently cleared its reputation of having the worst atmosphere in that country, and report now has it that the air of the town is as clean as that of Bath. The first six chapters of the book are devoted to the methods of formation and the general physical and chemical properties of aerosols. The remaining five chapters are devoted to the way in which fumes and dirty gases are treated industrially; to dust explosions, their cause and method of prevention; to the preparation of substances in a very finely divided condition; and the use of smoke in warfare. Some account is given of the meteorological conditions affecting the presence of dust and water particles in the atmosphere.

In his foreword Sir Oliver Lodge emphasises the significance of the subject of smokes and clouds in civil life. We can pass on with confidence the commendation he gives to this book, for an extraordinary amount of well-handled information is here got together. It is one to which reference can safely be made on a subject of growing importance to the public health.

THE MEDICAL ANNUAL.

A Year-book of Treatment and Practitioner's Index. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1924. Pp. 616. 20*s.*

THE appearance of the Medical Annual each year is welcomed not only by practitioners who have little time to keep abreast with current literature except through its good offices, but also by those who read widely on certain limited lines and have learned to rely on this publication for a summary of the year's work, and for indications of progress in directions unfamiliar to them. Especially do practitioners resident in distant parts of the world appreciate the Medical Annual and the beautiful coloured plates with which it is illustrated. The information given is collected and arranged in assimilable form, and the several articles, though brief, are sufficiently critical in tone to guide the reader to a sense of the value of new work. The treatment of diabetes by insulin naturally looms large in the 1924 volume. A discussion of the history of the experimental investigations into the ætiology of disseminated sclerosis appears to be exceptionally complete. It is pointed out that in this, as in many other diseases, it may happen that a spontaneous remission coincides with some particular method of treatment, which may thus gain unmerited credit as a therapeutic agent. This attitude of reserve in assessing the value of treatment is happily growing with the better scientific training of the medical student. Practitioners may rest assured that in this manual no undue praise is given to new remedies without regard to the circumstances of their trial.

POPULAR BACTERIOLOGY.

Fighting Foes too Small to See. By J. MCFARLAND, Professor of Pathology in the University of Pennsylvania. Philadelphia: F. A. Davis Company. 1924. With 64 illustrations. Pp. 309. $2.50.

THIS is not about pride and covetousness, but about microbes, and it is a pity the author was not frank enough with the audience he desires to reach to say so. It is the outcome of a series of popular lectures on bacteriological hygiene given in Philadelphia, and is but a moderately successful attempt to instruct a lay audience how to make practical use of modern parasitology in an understanding way. Such popularisation is never an easy thing to do well, and Prof. McFarland fails in two different ways. In the first place, he does not realise how completely his own mental and verbal phraseology differs from that of people who have had no training or experience in the natural sciences. And as a result technical words and phrases slip into the narrative more frequently than they should; we do not wonder that one publisher declined it on that ground. And in the second place, the author falls to the temptation of making his readers gasp and wonder at the amazing things he has to tell. Rather more than a quarter of the book is occupied with plague and sleeping sickness—travellers' tales which are miraculous indeed, but hardly within the picture. The laymen neither wants nor needs this; he wants just the same plain truths about microbes that the elementary

medical student wants, only they must be expressed in terms he can understand.

Apart from these defects, the book conveys a good deal of useful information which should contribute to the healthiness of its readers. It is too bacteriological and does not lay enough stress on the fundamentals of sound hygiene—the personal and communal common-sense decency and cleanliness in which Chadwick and Simon and their companions laid the foundation-stone of modern hygienic progress. Washing, indeed, seems hardly to be mentioned as an anti-microbial procedure; it is, however, detailed as one of the incidents of life which brings microbes into contact with the body—and this in a country where every big hotel will presently advertise that each bedroom has two bathrooms. Perhaps if washing with sterile water were more general, Prof. McFarland would allow kissing (p. 88), and let us go on taking off our gloves before we shake hands (p. 93). It is, frankly, directions like these which are apt to bring bacteriology into something like popular contempt. The technical details seem to be accurate. "Doubtless a rat-flea can live for a time upon any blood" (p. 251) can hardly be true, since some rat-fleas will not feed upon, e.g., man. On the same page Martin is disguised as "Roger." Dr. Bastian's name is mis-spelt (p. 30). The description of Lister as a "Scotch surgeon" needs qualification.

JOURNALS.

MILITARY SURGEON.—The February number of this journal presents the first of a series of articles on the medical problems of the German army in the late war written by Germans. This month's article, by Colonel Dr. Waldmann, is on Shelters and Water-supply in Defensive Battles, which are characterised by the immense accumulation of men and stores in a very restricted area, with losses very heavy and replacements difficult. The urgent needs in that situation are shelter and water. As to shelter, soldiers must be crowded; the Germans made transportable barracks (huts), each hut holding 48 men, with 200 cubic feet for every man; these were found satisfactory for supports. Huts should be in woods, for shelter from the winds and for concealment. Caves make good shelters. In dug-outs, where 125 cubic feet is the maximum, ventilation is of great importance, and is best secured by a fire, which may have to be of charcoal, lest smoke attract notice from the enemy. Trenches and dugouts must be drained, best to a sump pit; water will find its way here and so will heavy lethal gases; chloride of lime spread about will destroy any mustard gas. Humidity was found more trying than carbonic acid (even 10 per cent.) in these underground passages. Carbonic oxide was watched for with palladium chloride papers. During bombardments latrine buckets had to be taken into dug-outs and emptied during intermissions. Cresol, sprayed in watery solution from a syringe, was found a good deodorant for bodies lying in between the lines. Pill-boxes (of reinforced concrete) had so little ventilation, their atmosphere was so moist, that service in them was dreaded, but they fulfilled the essential requirements of hygiene, and the men could still fight and fight well in them. Colonel Waldmann says that at last even hygiene fails and only iron determination and contempt of death keep men going. The best protection against epidemics is clean water, but the piped supply to the front line breaks down in battle, which cuts the pipes. So underground cisterns were made, wells were developed, even up to the second-line trenches, village wells being cleaned with chloride of lime; in action, water was carried forward by water wagons on field railways, or on men's backs, or had to be dropped by airmen. A filter was put in each man's canteen, chlorination then killed infection and boiling got rid of lethal gases, except arsenic and picric acids. It appears that the German methods were very like those that solved the same problems for ourselves.

The Conduct of Medical Practice.

A Series of Articles by Experts dealing with the Difficulties Encountered in Professional Life and How to Meet Them.

XIV.—PRESCRIBING FOR PANEL PATIENTS.

BY LEONARD SHOETEN SACK,
BARRISTER-AT-LAW; JOINT AUTHOR OF "MEDICAL INSURANCE PRACTICE."

We now prescribe, like doctors in despair.—*Dryden.*

THE provision of medicines for panel patients has given rise to much bona fide misunderstanding and to much malicious misrepresentation. The doctor and the insured person have been equally concerned. There is a psychological reason for the patient's suspicion. The "bottle of medicine" still remains an almost sacrosanct plebeian institution. Medical treatment without it is regarded as either mean, inefficient, or neglectful. Health education has not yet persuaded the commonalty to accept without resentment a treatment of self-denial as a substitute for an intemperate indulgence in physic. Anything which tends to depreciate the contents of the medicine-bottle is therefore a factor of great influence on the minds of the insured population.

The widespread misconceptions on the part of many insurance doctors is also explicable. The varying provisions of statute and regulations, and the varying practices at one time current in different areas, have no doubt had much to do with them, but the trouble mainly centres in the novel method of control which the regulations have set up in connexion with what is felt by so many doctors to be essentially a matter for private professional judgment.

The subject is one of such importance both to the reputation and practical efficiency of medical benefit that an elementary restatement[1] of principles will, it is hoped, be forgiven.

Basic Definitions.

There are three fundamental definitions. Section 8 of the National Insurance Act, 1911, defines medical benefit as "medical treatment and attendance including *the provision of proper and sufficient medicines. . . .*" This definition is amplified by the medical benefit regulations. Schedule I. includes among the insurance doctor's duties the prescribing of "*such drugs . . . as are requisite for the treatment of any patient*," while Section 37 (dealing with excessive prescribing) sets up, as the standard of character and quantity of the medicines, "*what is reasonably necessary for the adequate treatment*" of the insured person.

It is of the first importance that these definitions should be kept clearly before the mind. They are the authoritative statutory definitions to which the doctor can appeal; any departmental decision and any administrative or executive action on the part either of the Central Department or of the local committees which did not accord with them would be ultra vires and could be successfully contested in a court of law.

In fact, however, the Ministry of Health do not appear to have attempted to limit improperly the scope of these definitions or to restrict unduly the professional judgment of the doctor in applying them. Emphasis has repeatedly been given to the principle that the doctor is not only entitled but required to prescribe the medicines—whatever may be their cost—which are, in fact, necessary for the proper and adequate treatment of the patient. On a broad view of the question it could not be otherwise. One has

[1] For purposes of brevity reference is made only to medicines, but the principles apply equally to the ordering of such appliances as have been prescribed by Regulation. The discussion does not apply to doctors who themselves supply drugs and appliances at a capitation rate—their main concern is as to the adequacy of the capitation rate.

only to consider the list of drugs and appliances for which special payment is made to doctors who themselves supply medicines at a capitation rate. The list includes vaccines, serums, peptone and glandular preparations, and insulin. It is not reasonable to suppose that a scheme, which admittedly allows the provision of these preparations whenever they are actually necessary for the treatment of the patient, should require or encourage the doctor to deny other and cheaper necessary medicines.

Checking Extravagance.

The misunderstandings which have overclouded the basic principle appear to be traceable to the provisions of the regulations for dealing with cases of "excessive prescribing." The whole principle of control in this respect, and the detailed machinery which has been set up to secure that control, are criticised on three main grounds: (1) that they are unnecessary; (2) that they constitute an unjustifiable and improper interference with the doctor's professional judgment; (3) that the mere possibility of surcharge constitutes, in effect, a continual menace which has justified the belief in an unduly restricted choice of medicines for insured persons. An examination of these three criticisms is perhaps a convenient way of exploring the subject.

In considering whether there is a need for any sort of check or control, it is necessary to recall that one is dealing with a scheme of insurance. No insurance policy can offer unlimited benefits for limited premiums; the defined premium covers a defined risk. The premiums paid on the National Health Insurance "policy" cover, inter alia, the provision of whatever medicines are reasonably necessary for the adequate medical treatment of the policy holder—i.e., the insured person. This is clearly something different from an unlimited supply of medicines or medical preparations, irrespective of their actual need for treating the particular illness. In the case of O'Neill *v.* Middlesex Insurance Committee (1916, 1 K.B. 336) Mr. Justice Rowlatt thus interpreted the position:—

> "The Act is worked upon a scheme that there is to be a fund to provide for these drugs as well as to pay the doctors, and it is obvious that there is a limit to the amount available for that purpose. The duty of prescribing for any patient necessarily involves that the prescription must be reasonable according to the resources available for pay. . . . there must be a duty on a panel doctor not to be extravagant or reckless in ordering medicines which are unnecessarily expensive."

Or, as the principle was stated by the department, the doctor "must prescribe for his insured patients whatever drugs are necessary for adequate treatment, however costly they may be, but on the other hand, he must have due regard to cost and not order the more expensive preparations for purposes for which the less expensive will serve equally well."

Accepting, as one must, this necessary limitation to the benefit provided, some sort of control would seem to be unavoidable. The insurance scheme affects 15 million persons; for England alone 36 million prescriptions are now written in the course of a year at a cost of close on 1½ million pounds, and the number is steadily increasing; 15,000 doctors are entitled by writing prescriptions to make heavy charges on the insurance funds without affecting their own remuneration. If the actuarial calculations underlying the insurance scheme are to be verified, some check must evidently be put upon the giving of benefits which are not covered by the prescribed premiums.

The Machinery of Control.

Granting the need for some form of control, does the existing machinery involve undue lay interference with the professional judgment of the doctor? Let us examine the skeleton construction of that machinery. All National Health Insurance prescriptions are priced at the Pricing Bureaus which have been set up at various centres. In the course of this work certain tables of averages are prepared, affecting the lists of individual doctors, or given areas. These figures are submitted for scrutiny to the Minister of Health. If the scrutiny reveals in the case of an individual doctor an average cost per prescription considerably in excess of the general figure for the area, further details as to the individual prescriptions affected are obtained from the bureau. If this further information still suggests an unexplained and considerable excess above the average, the Ministry take initial action by bringing to the doctor's notice, through the regional medical officer, the facts which suggest extravagant prescribing. The doctor can then either make an oral explanation to his regional medical officer (who will call upon him—accompanied by a representative of the panel committee, if that committee so desire) or he can send a written reply direct to the Minister. Often the matter will not go beyond this stage. If the prima facie case of extravagance seems to require more formal investigation the whole matter is referred to the panel committee—a body, be it remembered, consisting solely of doctors, at least three-fourths of whom are panel doctors. *It rests with the panel committee alone to decide the crucial question whether there has or has not been extravagance;* and before that committee can arrive at this decision they must give the doctor an opportunity of appearing before them or of submitting a statement. The subsequent functions of the insurance committee and of the Minister are respectively to recommend and decide the penalty, if any, to be inflicted if the panel committee finds that there has, in fact, been extravagance. The doctor may appeal against the panel committee's decision to a court of independent referees of whom one must be a doctor; the Minister can similarly refer the case to independent arbitrators if he is unsatisfied with the action of the panel committee. Further, the Minister may permit a panel committee to make the initial investigations of statistics on which the prima facie case is established.

The essential decision as to whether there has been extravagance is thus in the hands of the panel committee or of an independent court of referees on which the profession is represented. So far as there is interference with the professional judgment of the doctor it appears to be an interference sanctioned by members of his own profession.

Personal Variations.

The general opinion or practice of the profession does not, however, necessarily determine the question, for it has on several occasions been recognised that the personal element in prescribing is a material consideration. The following official dicta may be quoted:—

> "In interpreting the term 'reasonably necessary' . . . allowance must be made for the personal element. It is clear that if insurance practitioners are to retain the independence of judgment that is necessary for the best treatment of their insured patients, rigorous conformity with the view of the majority of the profession or of a Committee of the profession must not be required of them; and, that the progress of medical science may not be checked, scope must be allowed for the exercise of initiative and for suitable experiment. The enforcement of stereotyped methods and standards of prescribing would be prejudicial both to the immediate interests of patients under treatment and to the ultimate interest of insured persons generally. . . . Just as one workman can use a tool better with a handle of one shape and another with another, so it is desirable that, within reasonable limits, a doctor should be allowed to follow methods of treatment which are most congenial to him. . . . .
>
> The question is . . . not to be determined by the test of rigid formulæ, but by the application of common sense to the facts of the particular case, which must be viewed as a whole."

Similarly, consideration is given to the particular circumstances of the practice. Thus, the average cost per prescription will probably be greater in the small practice. Or again,

> "If the patients of a practitioner considered collectively require a more than usual amount of treatment, or are particularly liable to illnesses requiring treatment of a more than ordinarily expensive kind, or if he has a run of cases of a particular kind requiring specially expensive treatment, all these facts must be taken into account in interpreting the meaning of a high average cost of prescribing."

On the other hand, it has been established that the adoption by the doctor of similar methods of prescribing for private patients does not in itself afford proof that there has been no extravagance as regards panel patients. Neither is the preference of the patient for a particular medicine regarded as providing in itself a sufficient ground for relieving the doctor of the responsibility to decide what is necessary.

Excessive Prescribing.

There remains the criticism, undoubtedly of considerable influence, that the mere existence of an elaborate machinery for penalising excessive prescribing places an undue restraint on the writing of prescriptions. A brief survey of the main principles on which cases referred to the Minister have been determined may assist in assessing the measure of apprehension which is justified.

One group of cases deals with an unnecessarily high cost of the medicine or of some of its ingredients. This may occur through the unnecessary use of patent medicines or proprietary preparations where an equally efficacious but less expensive B.P. preparation is available. Proprietary preparations are not, as a class, disallowed. "We recognise," the department have said, "that proper allowance for the needs of exceptional cases might justify the use of a proprietary article in a certain number of cases." The question to be determined is "whether it was necessary for the adequate treatment of the patient that preparations made by particular manufacturing firms should be used instead of less expensive preparations suggested in the B.P. which are ordinarily employed by medical practitioners for the same purpose." Many proprietary preparations have notoriously no greater therapeutic value than cheaper B.P. preparations and in such cases it seems not unreasonable to say that there is neither need nor excuse for a routine use of the proprietary article.

The question of unnecessarily expensive B.P. preparations is governed by the same considerations. Where, through a routine prescription of particular combinations or a mere indifference to cost, costly ingredients are included without improving the therapeutic value of the medicine with reference to the particular patient for whom it is prescribed, a legitimate case for criticism would seem to lie.

Again, an excessive use of flavouring agents may constitute extravagance. In one case where the flavouring agents were six times as costly as the active drugs, the panel committee:—

"did not contend that sweetening and flavouring agents have not a proper place in the composition of some remedies but that those preparations cannot be placed in the same category, therapeutically, as what they described as 'active' drugs, and that a reasonable moderation should be observed in using them."

Instances have arisen where an expensive medicine is prescribed on the recommendation of a consultant. Here the view of the department is that the consultant's recommendation is clearly a matter of which account must be taken in determining whether the medicine was reasonably necessary, although obviously extravagant prescriptions could not be justified solely by reference to the consultant's advice. Cases have, again, occurred where an unnecessarily high dispensing fee has been incurred. The unnecessary prescription of a preparation in powder or tablet form has, for example, been held to place an unjustifiable charge on the drug fund.

Finally, there is extravagance by unnecessary frequency of prescriptions. Here again, so far as recorded cases go, the abuse has ordinarily been obvious where a penalty has been inflicted. Two typical cases may be quoted. In one case 1 lb. malt and oil was prescribed on the 9th, 15th, 22nd, and 30th of a month, the dosage ordered being such that each prescription should have lasted 17 days; in the other case eight prescriptions given between the 1st and 25th of a month accounted for a 60 days' supply of medicine. Few doctors would object to such cases being the subject of inquiry and control. More difficult is the problem of the steady increase in frequency throughout the country; but this is a matter to be dealt with on the basis of broad policy rather than of individual disciplinary action.

The Position Summarised.

A layman must necessarily draw conclusions on this subject with great reserve. On the whole, however, it seems that the cases where surcharge has been upheld by the Ministry are, generally speaking, not such as would regularly occur in the practice of the reasonably careful practitioner; neither do they appear to afford ground for undue apprehension or for an excessive caution in withholding medicines from insurance patients. The subject has been so overlaid with misunderstanding that an exaggerated complexity has been attributed to it. So far as the doctor is concerned, there seems to be only one standard and one question to be answered: "Is the medicine or preparation which I propose to prescribe reasonably necessary, as regards character and quantity, for the adequate treatment of the particular patient for whom it is to be prescribed?" If the answer is in the affirmative, the statute and regulations definitely sanction the prescription. It may be said that this is not an easy standard to apply. But is it not, after all, precisely the standard which is daily applied by the many doctors who are supplying medicines at a capitation rate of payment.

New Inventions.

A CUP-AND-BALL ANEURYSM NEEDLE FOR DEEP LIGATIONS.

WHILE investigating a means of tying, from behind, the first part of the left subclavian artery, I asked the students in the dissecting-room of the Royal College of Surgeons, Ireland, to test the description and simplicity of my method. Using ordinary aneurysm needles they tied the vessel correctly, but it was plain that a better tool would have made the task yet more simple. When the needle was threaded and then passed, the ligature lay back along the shaft and was difficult to catch in the deep wound; while if the needle were passed unthreaded it was not easy to expose and thread the terminal eye.

On experiment I found that an ordinary hooked dental stopping implement passed easily under the artery, and it occurred to me that if the smooth ball-tip of the instrument were detached and pierced like a bead, and if the stem were hollow with a mouth wide enough to seat the ball, the ball could then be strung on a thread passed through the stem. The thread being pulled taut, the ball would be firmly fixed to the cupped end of the stem and the implement could be passed like an ordinary aneurysm needle under the vessel. It would then remain merely to pick up the ball beyond the artery and thus retrieve the thread, which could be done under the guidance of vision or of touch by means of a fine hairpin bent into a sort of elliptical loop. Keeping the thread taut, the ball was first made to enter the wide part of the loop and was then caught at the constriction. The thread was relaxed and the ball withdrawn.

I have had another and smaller model of this needle made for ligating the middle meningeal artery as a preliminary to operation on the root of the Gasserian ganglion or the cavernous sinus. With modern technique the aperture in the temporal fossa has a diameter of about 3 cm., and the artery leaves the foramen spinosum some 5 cm. from the surface of the zygoma. Thus here, too, a deep vessel is tied through a small unyielding gap. Mr. A. A. McConnell and I have found that with my instrument ligation of the artery at the foramen spinosum becomes extremely simple.

These cup-and-ball needles have been made for me by Mr. Edwin Haines, of Dublin.

ARNOLD K. HENRY, M.B. Dub., F.R.C.S. Irel.

THE LANCET.

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EMMETT HOLT AND HIS WORK.

IN his Goulstonian lectures for 1924 on Some Wasting Disorders of Early Infancy, the first of which is published in our present issue, Dr. LEONARD PARSONS repeatedly refers to the writings of the late Dr. L. EMMETT HOLT on the same subject. This is a timely reminder that the death of this eminent physician in Peking in January last, was, at the time, allowed to pass with scant mention either in American or English medical journals, an omission which only the exigencies of distance and the absence of detailed information can excuse or explain. The journey to the East which resulted in the greatly regretted loss of Dr. HOLT was undertaken in connexion with an arrangement made with the Union Medical College of Peking to give a series of lectures on the subject of pædiatrics to the students of this older civilisation.

Dr. EMMETT HOLT, whose place in medicine it will be most difficult to fill, represented a type of physician with which we were until recently quite unfamiliar in this country. He was solely and exclusively what is known in America as a pædiatrist; that is to say, he practised as a specialist in the diseases of children and dealt with no other kind of case. In this respect he differed from his contemporaries in this country who, almost without exception, practise in general medicine as well. He differed also from the German professor of pædiatrics in that he had no research laboratory, and, at any rate, until recently no following of students eager to work for their chief and share with him the crumbs of honour falling from the great man's table. Dr. HOLT was pre-eminently a clinical physician with great clarity of vision and a real flair for teaching. His famous text-book on the Diseases of Infancy and Childhood, which has been translated into no fewer than four foreign languages and which has passed through many English editions, has been the sheet-anchor of thousands of medical practitioners in every part of the world. No book has done more to make accessible to the whole profession the many brilliant discoveries which of recent years have illuminated the entire field of pædiatrics. There can be little doubt that the appreciation in which Dr. HOLT's writings are held is well justified, for he was a past master of accuracy and clearness of expression. Although he has frequently been described as a great scientist, it is improbable that his eventual claim to fame will rest on this reputation. His practice and teaching were, it is true, based on a sound pathological and physiological groundwork, but he was neither pathologist, physiologist, physicist, nor biochemist; he knew just enough of all these sciences to make him, in view of his enormous clinical experience, a sound practical physician and a first-rate teacher. He discovered no new disease, neither did he lend his name to any new symptom or complex of symptoms, but all the same it has probably been given to few men to make so many comparatively little known diseases among children, comprehensible to others and amenable to treatment. Dr. HOLT was 69 years of age when death overtook him in Peking, and it speaks eloquently for the elasticity of his arteries and the adaptability of his mind that during his later years the character of his work became modified and modernised in conformity with the changed conditions of medicine. As one of the original members of the board of directors, and as secretary of the Rockefeller Institute, he began before it was too late to appreciate and participate in research and experimental work of various kinds calculated to throw light on the problems of nutrition, and he collected around him a few of the younger generation of scientists who are able and content to devote their time to research for its own sake. To anyone who compares one of the last of Dr. HOLT's publications—namely, a little volume [1] entitled Food, Health, and Growth—with any of his earlier writing this change of attitude, and leaning to the more scientific method, will be abundantly apparent. At the time of Dr. HOLT's death he was physician in charge of the Babies' Hospital in New York, to which he devoted most of his time. Previously he held the posts of professor of diseases of children in the New York Polyclinic Medical School and Hospital. During the years 1901 to 1920 he held the post of clinical professor of diseases of children at the College of Physicians and Surgeons.

Although Dr. HOLT's personal inclinations were always in the direction of preventive medicine, he played no great part in the world-wide campaign to promote the welfare movement, until the time when two American Associations, the Child Health Organisation and the American Child Hygiene Association, were consolidated and merged in the one society, the American Child Health Association, of which he soon became the moving spirit and inspired leader. It was largely in connexion with the missionary work of this Association that he took his fatal journey to Peking, a journey intended to bring to the youth of an ancient civilisation the inspiring message of American welfare work.

CANCER AND CIVILISATION.

THE incidence of cancer in the different races of mankind has always presented an interesting aspect of the cancer problem. Medical men working among uncivilised races have returned to Europe with the tale that they had seen very few cases of cancer among those peoples. The impression was thus created that cancer was a disease of civilisation. In a sense that must necessarily be true. For cancer becomes increasingly more frequent as age advances, and affects particularly those of middle age, between 45 and 60. Uncivilised races know nothing of time, and cannot give an account of the length of their individual lives. But it is safe to say that civilisation has greatly prolonged our average span of life, and that therefore the number of people likely to be affected by cancer is much smaller in uncivilised races than in civilised races. Morover, civilisation inculcates a respect for age which seems absent from the mind of the tribes that kill their old people when they can no longer take part in the hunting and fighting, and have become a burden to the community. Civilisation tends to work in the opposite direction, and even to sacrifice the young to the old in certain directions. It thus alters the age-constitution of the population in such a way that the absolute number of cases of cancer must necessarily be greater than in an uncivilised population, even if no other factors were operative. If we consider further that in uncivilised regions large areas are sparsely populated, it is easy to see how a

[1] The Lane lectures (reprinted) given at the Medical School of the Leland Stanford Junior University in San Francisco.

medical man working in such a region and trained in a hospital in one of our densely populated towns, may form the impression that cancer is of rare occurrence among uncivilised races.

This alleged freedom from cancer of uncivilised races has been the subject of repeated investigations during the last 20 years. The first comprehensive inquiry was carried out in this country by the Imperial Cancer Research Fund. Cancer was found wherever it was looked for by competent observers, and the fact was established that cancer is a disease common to mankind throughout the world. In so far as African races are concerned VON HANSEMANN came to a similar conclusion a few years later on the basis of material collected from the German colonies. Some interesting results were obtained from those studies concerning the organ-incidence of cancer in different races—results which clearly pointed to chronic irritation as being the determining factor, as exemplified by betel-nut and kangri cancer. But it was also recognised that there was no statistical basis for a comparison of the frequency with which cancer affects uncivilised and civilised races. As we go from the equator to the poles the same story repeats itself. The tale is put about that among Eskimos in Greenland cancer is unknown; the Danish Government appoints a commission to investigate the matter, and cases of cancer are found. Their number was necessarily small because the total population is small, but owing to the special conditions obtaining in Greenland it was possible to make an estimate of the size of the population, and obtain an approximate analysis of its age-constitution. Prof. J. FIBIGER, who reported on the results of this commission, was thus led to the conclusion that cancer affects the Eskimos with approximately the same frequency as the Europeans.

The paper by Mr. R. V. DOLBEY and Mr. A. MOORO on the Incidence of Cancer in Egypt, which we published on March 22nd, is a further and useful contribution to the subject of the organ-incidence of cancer in the native races of Egypt. These authors state that cancer is less frequent in Egypt than in England, but we can draw no such deduction from the data which they supply, for the number of cancer cases in a hospital does not reflect the incidence of the disease in the whole population, and comparison is hardly admissible between the number of cancer cases in a hospital in Egypt and in England. Even if it were a reflection, it would be of little statistical value, so long as we do not know the size of the population of which the hospital population in Egypt is supposed to be a reflection nor its age-constitution. Of considerable interest, however, is the consideration of the organ-incidence. Perhaps the most striking fact is the relative rarity of intestinal cancer, which the authors attribute partly to the diet. The idea that diet is related to the incidence of cancer of the stomach and intestine has much to commend itself. It is interesting to note that the diet followed by the fellaheen is characterised by an abundance of vitamins, which, as the recent work of MCCARRISON and of CRAMER has shown, are specially concerned in maintaining the functional and structural integrity of the alimentary canal. The further suggestion that the presence of digestive troubles, generally resulting from the mental stress and strain of civilised life, are a condition predisposing to cancer of the alimentary canal is also a reasonable one. On the other hand, if these two factors are really of such ætiological importance as the authors suggest, we might expect to find some clinical correlation from the data in civilised countries between the incidence of intestinal cancer and certain professions, or at least certain physical and mental types of patients. No such clinical evidence appears to exist. The difficulty of correct diagnosis is so great that many cases of intestinal cancer are treated for such a condition as anæmia, and their true nature is first recognised at the post-mortem examination. It would be interesting to know the number of autopsies carried out at Kasr-el-Ainy, for, broadly speaking, the number of cases of cancer recorded by a hospital is in proportion to the frequency with which such examinations are made.

We may have to debit civilisation with creating conditions predisposing to intestinal cancer. But if we do so we must also credit it with diminishing the incidence of other forms of cancer, such as rodent ulcer, cancer of the scalp, or cancer of the bladder. Civilisation may therefore shift the organ-incidence of cancer. It may increase the incidence in one organ and diminish it in another. It cannot be incriminated wholesale as a cause of cancer generally. In fact, it would not be paradoxical to say that the *recorded* incidence of cancer in a community is a measure of its degree of civilisation. The prolongation of life, the ordered communal life which renders trustworthy vital statistics possible, an efficient medical service that ensures accurate diagnosis of a disease which has no characteristic symptomatology, and an intelligent population that takes advantage of such a service:—all these are factors of civilisation which tend to raise the actual as well as the recorded number of cancer cases in a community.

THE DOGS' PROTECTION BILL.

FOR the modest sum of 6*d.* net there can be obtained from His Majesty's Stationery Office No. 21, Vol. LVI., Parliamentary Debates, House of Lords, in which will be found the proceedings which attended the Second Reading of the Dogs' Protection Bill in the Upper House last week. The Second Reading was proposed by Lord BANBURY, who has already stood sponsor for the measure on previous occasions in the House of Commons, and the debate which followed his Lordship's introduction was a model of the way in which a far-reaching subject, touching at one end our commonest instincts and at the other our highest scientific equipment, should be conducted. The speakers were eloquent, and on both sides it may be freely conceded that the purpose of their words was elevating and humane. Lord BANBURY in his plea for the Bill had, of course, to rely upon the age-long friendship between the man and the dog for his arguments against the employment of dogs in physiological experiments. His words were frankly addressed to the heart, and were reinforced by apt and moving citations from the written and spoken words of others. Indeed, for his purpose, it would be well if his Lordship attempted to employ no other arguments than those supplied from literature or drawn from the common knowledge that we all accept the dog as a friend, for when he brings up his scientific battalions their fighting quality is unimpressive.

Once again we must protest against the implied use of THE LANCET as among Lord BANBURY'S scientific supporters of the Dogs' Protection Bill. Though we claim as high a degree of affection and respect for the dog as his Lordship himself, we are out of place in that category, while the appearance of THE LANCET as, though involuntarily, being one of his backers, can only be due to a suppression of facts. In THE LANCET of May 31st, 1919, we published a memorandum issued by the Medical Research Committee upon the Dogs' Protection Bill, and in an editorial note upon this

Memorandum the following two consecutive sentences occurred :—

"The Memorandum of the Medical Research Committee which we also print in substance this week demonstrates, without reasonable pretext for gainsaying, that the experimental use of dogs has advanced our knowledge and has been of benefit to suffering humanity. This is not to say that such knowledge could have been acquired in no other way."

The meaning of the extract quoted was and is perfectly clear to a medical audience, and it is simply not the fact to suggest, as Lord BANBURY has done, that, perhaps without knowing what we were doing, we have supported his measure. The impression produced by a verbatim quotation of the second sentence, while omitting the first or only alluding in some general way to its content, is a grave misrepresentation.

We need not recapitulate in these columns the undoubted benefits both to the man and to the dog which have accrued from scientific experiments upon canine subjects. The story of the researches into diabetes and rickets, for example, are familiar to all our readers and no better summary of their results can be found than in the official report to which we have referred above. Such information is there resumed with clearness and accuracy by Lord KNUTSFORD and Lord RAYLEIGH. We know of no other way as yet in which such valuable knowledge could have been acquired save by using the dog as the test object. But this is not to say that in time to come some future scientific developments may not enable analogous researches to be undertaken upon lowlier animals, nor, indeed, that the use of any animal as a test object may not be superseded in some experiments where it must now be employed.

ADVERTISING HEALTH.

THE Glasgow Public Health Department have made a new departure by issuing a monthly health bulletin. We have received copies of the first two issues. Each consists of four pages. The first page deals shortly with diseases which have been prevalent or to which attention has been drawn during the month. The second page deals with birth- and death-rates during each of the four weeks. The infant mortality-rate might be added to this statement with advantage. The third page gives the notifications of disease and meteorological records week by week, and the fourth page the addresses and hours of the various infant welfare centres and tuberculosis dispensaries. The first issues are being sent to the consulates, public libraries, and medical practitioners, and also to anyone who writes expressing a desire to be supplied with them. These issues are couched in technical language, and seem intended chiefly for medical practitioners and others who have made a special study of public health matters, but there seems to be no reason why a health bulletin of this kind should not be made much more attractive with a view to arousing the interest of a wider circle; in fact, of every intelligent citizen. We all recognise that the public health depends mainly upon the effort of each individual to lead a healthy life, and such a bulletin might make a much more direct appeal to the individual. For example, each bulletin might be associated with a motto or a tilt against some prevailing habit inimical to communal health. Both the United States and Canada have developed this idea of advertising health much more than we have, and we might well take a leaf out of their books. We think there are great possibilities in front of the health bulletin; it should, however, be not only a more or less dismal record of the prevalence of disease, but also an inspiration towards more abounding health.

Annotations.

"Ne quid nimis."

THE PANCREAS IN RELATION TO DIABETES MELLITUS.

THE starting-point of our knowledge in the ætiology of diabetes mellitus is usually stated to be the discovery by Mering and Minkowski in 1899 that extirpation of the pancreas led to the disease. Although this observation was the first experimental proof of the association between the pancreas and diabetes, the idea was much older. Thus, Conrad Brunner, over a hundred years before these investigators, attempted to prove that the pancreas was concerned with glycosuria, and early in the nineteenth century Richard Bright prepared a specimen for the Guy's Hospital Museum "to show the relationship between the pancreas and diabetes." The specimen consisted of a fibrosed pancreas. Another point sometimes overlooked is that neither Mering nor Minkowski associated the islets of Langerhans with diabetes, but attributed the anti-diabetic functions to the whole organ. The truth of this statement is borne out by the appearance of a large number of papers at that date giving the clinical results of treatment by oral administration of the whole gland. It was not until several years later that Opie and others called attention to the possibility of locating the anti-diabetic function in the islets described by Langerhans in 1860. This view was supported by the contemporary work of Laguesse, who proved that the degeneration caused by ligation of the duct did not affect the islets, and later by the work of Rennie and Fraser on the islets of teleostean fishes. The Toronto workers have also supported the classical views, since they state that, in fish pancreas, insulin is found almost exclusively in the main islet. As the result of histological and experimental evidence, it has become an accepted fact that the anti-diabetic hormone is secreted by the islets, and that diabetes mellitus is due to some demonstrable lesion or functional derangements of these organs.

It must not be supposed, however, that the independence of the acini and islets has been unchallenged. Many workers have been opposed to this doctrine, and in our present issue an article by Prof. Horst Oertel appears, in which the case against the islets is marshalled. The evidence in favour of the independence of the islets is stated, and is criticised point by point. The work of Milne and Peters is quoted fully, in which it was shown that definite connexions between the islets and acini could be demonstrated by serial sections. Furthermore, in the histological examination of sections showing pancreatic degeneration due to any cause, it is possible to see acini taking on the appearance of islets, and islets disappearing. Special staining reactions give no definite demonstration, and hence do not afford support to the classical views. Prof. Oertel has, indeed, set out a strong case to show that the islets are really part of the general parenchyma; at any rate, the evidence upon which the orthodox view rests is quite flimsy. The author stresses the idea that diabetes is due to excessive breaking down of glycogen, and that insulin acts by inhibiting this. It has been shown by most workers, however, that glycogen disappears from the liver in insulin convulsions, and the greater part of the experimental evidence on the pharmacological action of insulin does not support such a theory. We have, however, no definite proof that insulin is a secretion from the islets of Langerhans. Collip has obtained insulin in small quantities from many animal tissues, and bodies very similar to insulin from plant sources. Prof. Oertel's suggestion that the insulin action is a general cell function, and the fact that active material can be prepared from any animal organ, both raise speculations as to whether the pancreas possesses the monopoly for making this

substance. There is no conclusive evidence that the pancreas alone can form insulin.

The whole question of the pathology of diabetes and of the pharmacological action of insulin is in the melting pot, and perhaps it is as well that the foundations of the classical views are being thoroughly exposed for inspection.

AN INVESTIGATION INTO BRONCHO-MONILIASIS.

A LABORIOUS investigation recorded in the *Medical Journal of South Africa* (Vol. XIX., p. 101, November, 1923) by Dr. A. Pijper suggests that bronchomoniliasis is neither a clinical nor a pathological entity. The Unna-Pappenheim method for staining the Ducrey bacillus was found to be a useful differential stain for monilia fungi, and its value was confirmed by the results of applying a special culture method, using an acid medium (pH2). In the course of 67 consecutive examinations of sputum, mostly undertaken to try to confirm a clinical diagnosis of pulmonary tuberculosis, Dr. Pijper was able to demonstrate by these methods the presence of monilia fungi in 36 cases. Having endeavoured unsuccessfully to grow monilia fungus on suitable media exposed to the air of the laboratory, though a large number of other fungi were grown in this way, he concludes that this fungus is not omnipresent, and that its incidence in sputum collected with the usual precautions may safely be ascribed to the patient. The severity of the symptoms occurring in the patient examined could not be correlated with the number of fungi found in the sputums, which varied considerably. Forty-three different species were differentiated by biochemical methods, and an attempt was made to estimate the pathogenicity of various strains by inoculation into the trachea of rabbits. No relation could be established between pathogenicity and cultural, biochemical, or morphological characteristics. In some rabbits lesions were produced by strains derived from milk or from human sputum where monilia was present in small numbers; whereas monilia which appeared in large numbers in human sputa sometimes had no effect on a rabbit. Dr. Pijper concludes that we possess no means of distinguishing between saprophytic and pathogenic monilias, and that it is doubtful whether the pathogenicity can be held to be dependent on the number of monilia elements present. He describes certain morphological characteristics of a constant nature on which, he suggests, a division of the monilia group might with advantage be founded.

X RAY DISEASE OF THE LARYNX.

X RAY disease of the larynx is an illustration of the common phenomenon that the rare disease discovered yesterday is the common disease of to-day. Four years ago severe X ray disease of the larynx was practically unknown, yet in the interval more than a dozen cases have been reported, and doubtless many others have been recognised but not published. A paper by Prof. Ove Strandberg in *Ugeskrift for Laeger* for Feb. 28th summarises the already bulky literature of this new subject and deals with the difficulties of the differential diagnosis as illustrated by a case sent to the Finsen Institute in Copenhagen with the diagnosis of tuberculosis of the larynx. The patient was a man aged 41, who, two years earlier, was operated on for a gland in the neck. As the operation wound broke down 14 days later, he was given X ray treatment in February and March and again in June of the same year (1922). In April, 1923, the destructive changes found in his larynx were diagnosed as tuberculous, but a careful examination in the Finsen Institute gave no support to this diagnosis, nor to that of syphilis or malignant disease. Exploratory excision and microscopic examination left no doubt that the ulceration and necrosis of cartilage were the outcome of the X ray treatment (the dosage of which is not stated), although there had evidently been an interval of several months between the last exposure and the development of the characteristic X ray changes. Prof. Strandberg classifies the X ray reactions of the larynx in three groups. The first includes the numerous and long-known cases characterised by hoarseness and œdema occurring from one to three days after an exposure, and lasting only for as many days. This reaction is generally regarded as harmless, and it has not been known to necessitate tracheotomy on account of œdema of the larynx. The second group includes those reactions which occur 10 to 20 days after an exposure, the patient suffering from a laryngitis sicca and, in some instances, from hoarseness and œdema of the larynx. Though this condition may be serious, it usually subsides in 10 to 14 days, but even though only a single exposure has been given, the œdema may necessitate tracheotomy. While the reactions in the first two groups are comparatively harmless, the reaction in the third group is often rapidly fatal. How long after a single exposure or a series of exposures this reaction may begin is not yet known; the longest interval hitherto recorded would seem to be 12 months (van Rossem's case [1]) and the shortest interval four weeks. Whereas in the first two groups the reaction occurs chiefly in the skin and subcutaneous and submucous tissues, the reaction in the third group involves muscles, cartilage, and glands which undergo necrotic changes. Tracheotomy and other operations in such cases are apt to be disastrous, as X ray ulcers may develop in the operation wounds, and for the same reason laryngectomy is contra-indicated. With regard to the dosage of the X rays, it is disconcerting to find that in none of the 13 cases collected by Jüngling was the dosage in excess of that commonly regarded as within the limits of safety. This disease may apparently develop in any case if the X rays traverse the region of the larynx, whether they be given for glands in the neck, sycosis, cancer, or any other disease. As for cancer of the larynx, Jüngling attaches so much importance to the risk of X ray disease as a sequel to X ray treatment that he insists on never giving it for a cancer of the larynx which is operable. Before more is known of the conditions under which X ray disease of the larynx arises, many of us will assuredly experience a certain dilatory inhibition when X ray treatment is recommended for morbid changes which occur in the neighbourhood of the larynx and which are amenable to less risky treatment.

LATE SERUM SICKNESS.

Dr. T. T. Crooks,[2] of the Durand Hospital of the John McCormick Institute for Infectious Diseases, reports the case of a woman, aged 26, who developed acute pharyngitis with œdema of the uvula. She had had two courses of toxin-antitoxin and was negative to the Schick test, but as she had been intimately associated with cases of diphtheria she was injected intramuscularly with 20,000 units of diphtheria antitoxin. Cultures from the nose and throat showed no diphtheria bacilli, but numerous hæmolysing streptococci. Four days after the injection urticaria appeared at the site of injection and in another three days became generalised, when the patient suffered from continuous nausea and vomiting and became cyanosed and pulseless. Atropine and epinephrin were given hypodermically, and the patient rallied, but was tormented for five days by the urticaria, which was only relieved by injections of epinephrin. From the second day of the urticaria she had very severe muscular and joint pains. The temperature ranged from 99·2° to 103° F. The blood showed a leucocytosis of 18,100 at the onset of the urticaria with 72 per cent. of polymorphonuclears, 25 per cent. large lymphocytes, 2 per cent. small lymphocytes, and 1 per cent. eosinophils. The remarkable feature of this case was that a reaction of such severity did not become severe until seven days after

[1] Journal of Laryngology, September, 1923.
[2] Journal of the American Medical Association, Jan. 12th, 1924.

injection. It is possible that the antitoxin in the toxin-antitoxin mixture given two years previously had sensitised the patient, though no previous example of such sensitisation has been recorded.

CARBON TETRACHLORIDE AS A REMEDY AGAINST INTESTINAL PARASITES.

IT is difficult in England to realise the importance which intestinal parasites play in tropical medicine. The difficulty of treating these parasites by vermifuges is considerable, and it is not surprising that new remedies are constantly making their appearance. The introduction in America of carbon tetrachloride for the treatment of ankylostomiasis,[1] and the extremely successful results reported from its use by mouth in doses not exceeding 3 c.cm. for an adult, is interesting in view of the well-known toxicity of this drug. In 1909 a death occurred whilst it was being used for "dry shampoo" purposes in a hairdressing establishment, and as a result of the publicity given to the matter by the coroner's inquest it is probable that it has been almost entirely abandoned for this purpose. In 1914 Sir William Willcox recorded a case of death due to this substance occurring in a man using it whilst working in an aeroplane factory, and in 1915 the same observer described in our columns[2] a number of cases in aeroplane workers. Toxic jaundice was the characteristic symptom, and post-mortem examination showed diminution of the size of the liver, marked degenerative changes of liver, kidney, and heart, and the deposition of fat in these organs. If the patients lingered some time before death there was much less fat, but there was marked destruction of liver cells, their place being taken by newly formed fibrous tissue, "replacement fibrosis." Trinitrotoluol, dinitrobenzene, arseniuretted hydrogen, phosphoretted hydrogen, arsenobenzol derivatives, and many other compounds may cause similar results. Recently, in view of this use of carbon tetrachloride, Meyer and Pessoa have carried out a number of experiments on dogs, by the administration of this substance to them in varying amounts, with a view to ascertaining the toxicity and suitable dosage of the drug, and, in the majority of experiments, obtained lesions similar to those described by Willcox. They conclude: (1) That carbon tetrachloride has a toxic action on dogs when administered orally; (2) that the presence and extent of the lesions vary in proportion to the amount of the drug given; (3) that with the same dose the lesions are more severe the older the animal (a point to be borne in mind when large-scale sanitary campaigns are being planned—i.e., when it is proposed to treat the whole population of any given area); (4) that the administration of an oil or saline purge with the drug tends to diminish its toxic action; (5) that the doses recommended by M. C. Hall (who introduced the remedy) are probably too large, since, when treating a group of cases by Hall's method, three cases of lumbar pain occurred (one with hæmaturia), and other symptoms occurred in other patients; and (6), that carbon tetrachloride is indeed a powerful vermifuge to ankylostomiasis. P. D. Lamson and others, writing in 1923, have also studied the oral and intravenous administration, and by the latter method found that 0·154 c.cm. of the drug per kg. of body-weight was lethal. They also found that the pathology consisted essentially of damage to the liver, one of the first manifestations of which was the appearance of abnormal amounts of bilirubin in the blood. They used carefully purified carbon tetrachloride. L. E. Warren in 1923, having regard to this treatment, discusses the purity of carbon tetrachloride and points out that, as this drug is usually manufactured by chlorinating carbon disulphide, the likely impurities are chlorine and carbon disulphide. The former is rare, but the latter common. Nine samples of the drug were examined; one was free from carbon disulphide, and the remaining eight contained amounts varying from 0·015 to 0·27 per cent. of carbon disulphide. Although there is no doubt that carbon tetrachloride is responsible for the lesions described, it seems important that pure samples of the drug should be used. From the above considerations it seems doubtful whether carbon tetrachloride given in amounts sufficient to act as an efficient vermifuge is a safe drug to employ.

[1] THE LANCET, 1922, i., 391. [2] Ibid., 1915, i., 545.

MASS METHODS IN MEDICINE.

WITH the growth of knowledge of the morbid physiological processes which constitute disease, and the elaboration of methods for investigating and assessing them, the art of diagnosis has reached a complexity undreamed even 30 years ago. There can be no hope of return to the days when a cultivated power of observation sufficed to the diagnostician; though, on the other hand, the day will certainly never come when the physician will be able to dispense with that same power of observation in favour of some trick done with a test-tube or burette. As knowledge progresses, however, it is probable that matters will become somewhat more simple; already this process is showing its results in treatment, and to some extent the complexity of present-day diagnostic methods as compared with those of former times is offset by the simplification in recent years of modern therapeusis. With the multiplication of special departments for diagnosis and treatment, the problem of their correlation so as to secure results in the most efficient and economical manner becomes pressing. For the guidance of the specialists there exist whole libraries of manuals, mostly excellent. For those responsible for the correlation of the various departments, however, works of guidance have, up to the present, been lacking, and proportionate welcome will be afforded to an attempt by Dr. George R. Herrman[1] to supply a concise but comprehensive statement of the arrangements for diagnosis and treatment of patients in the service of Dr. George Dock at the Robert Abbott Barnes Hospital, St. Louis. The book had its origin in a series of typewritten sheets of rules and suggestions supplied to the house staff by Dr. Dock when he was attached to the medical school of Washington University. By accretion these grew into the manual which in its present state affords a complete system of hospital management from the standpoint of the chief physician and his assistants.

One of the points of particular interest in this work is the light which it throws upon the way in which problems common to all great hospitals are dealt with in one particular instance. The American system of arranging the work of the house staff is described in Part I., which is devoted to administrative methods and contains rules for the guidance of all members of the medical staff from the resident physician to the clinical clerks. It is interesting to note that search is almost vain for rules for the conduct of the medical student; apparently he is not so important a person in the American as in an English medical school. Almost the only reference to his duties in Dr. Herrman's book occurs on p. 31, where he is instructed to step promptly to the bedside and give the patient's name. Most of the other things which in an English hospital are, or ought to be, done for the patient by the student seem in America to be done by the "interne." There may be some doubt as to which system is the better for the patient; there can be none as to which is better for the student. Suggestions as to case-taking and a description of the simpler routine methods of laboratory investigation are also included in this section. In Part II. are described the special laboratory methods of investigation of cases of all types in general use in the hospital. Together with the last part of the preceding section this constitutes a complete manual of clinical pathology, the peculiar value of which is that it has been compiled by physicians as the result of their experience of the utility of the methods described. Parts III. and IV. are devoted to dietetics and therapeutics. As to the

[1] Methods in Medicine. The Manual of the Medical Service of George Dock, M.D., Sc.D., formerly Professor of Medicine, Washington University School of Medicine. By George R. Herrman, M.D., Ph.D., Instructor in Medicine, University of Michigan. London: Henry Kimpton. 1924. Pp. 521. 30s.

latter, it is significant that it is the shortest section in the book. The number of drugs recommended for use is strictly limited, and it is urged that they be prescribed separately. One of the less fortunate effects of specialisation is evident in the chapter on hydrotherapy which includes the Scottish douche, the whirlpool bath, and other tempests in teapots, but in which the sponge and blanket bath escape all mention. In the section on dietetics are given extensive tables of the caloric equivalents of most of the foods in ordinary use in this country and America. Diets are given for almost every type of case from diabetes to constipation. In bringing together in a remarkably concise manner a large amount of information now dispersed in various manuals and journals, this section is of particular value. In the last part the actual forms and graphic methods used in recording all the facts concerning a patient are illustrated; as they number 74 it may be assumed that the Barnes Hospital will from time to time require new buildings to house its records.

This book may be said to be unique in the sense that nothing of the sort has been published before. That there was need for such a manual there can be no doubt, and this volume should prove of the greatest value to all responsible for the conduct of institutions, be they public or private, for the care of the sick.

LUES AND "LUETISM."

WE have received from Prof. Eugene Hertoghe, of Antwerp, and Prof. William Seaman Bainbridge, of New York, a joint communication entitled "Lues and Luetism," in which the writers wish to stress the following points:—

1. Non-malignant duodenal and gastric ulcers are more often of a syphilitic origin than is generally recognised.
2. Duodenal and gastric ulcers have frequently healed under the administration of bismuth which has recently been proved of anti-luetic value.
3. These ulcers may be due to an underlying factor non-reactive to any test, which the authors term "luetism."
4. Necessity for standardisation of the Wassermann technique, it being recognised that a positive Wassermann is merely a link in the chain of evidence of syphilis. "Moreover a possible form of lues which may have been modified by passing through many generations—'luetism'—might prove peculiarly non-reactive to the Wassermann or any other known test for syphilis."
5. Because iodine has been helpful in abnormal thyroid, the cause of this abnormality may be in many cases "luetism," the improvement in the physical and mental state under iodine being often due to the anti-luetic action of the drug.
6. "Luetism" may cause gastro-intestinal disease, accompanied by psychopathic states, and its recognition may be the explanation of these conditions. Syphilis causes much trouble in the blood-vessels and frequent mental disorders.
7. Finally, no one cause will explain all disease, and the underlying factors in each case must be thoroughly investigated.

It will be seen that these points are put in very guarded language, and there is nothing in the paper to show, for instance, how often duodenal and gastric ulcers are of syphilitic origin. Bismuth certainly has been found of value in these ulcers, but it is arguing in a circle to assume that because bismuth is also useful as an anti-syphilitic remedy, therefore these ulcers are of syphilitic origin. The same method of reasoning is applied to iodine and abnormal thyroid function.

The authors wish to add to medicine, already overburdened with vague conceptions, a new complex "luetism," non-reactive to any known tests, but an underlying factor in many conditions—a syphilis, in other words, that is not syphilis. "The basic purpose of this paper is to stimulate interest in certain very promising fields of medical research, and perhaps to contribute something towards the final solution of this multiplex problem of *syphilis*." We agree that to stimulate interest in any field of medical research is a worthy object, but we must express a doubt whether this is best achieved by the making of hypotheses incapable of being put to proof.

MATERNAL MORTALITY.

THE third of a series of reports[1] by Dr. Janet Campbell, a senior medical officer of the Ministry of Health, on the problem of maternal mortality has just been issued. Mr. Wheatley, the Minister of Health, who contributes a prefatory note, reminds us that Miss Campbell's two previous reports dealt respectively with the education of the medical student and the training of the midwife in the science and art of obstetrics. The present memorandum is concerned with the cause of excessive maternal mortality and the means for its reduction, the subject being reviewed from the public health rather than from the clinical aspect. Briefly, the evidence furnished in this exhaustive inquiry shows that the mortality-rate of women from childbirth is unnecessarily high in England and Wales, which is the area covered by Miss Campbell's investigation. The problem of excessive maternal mortality and morbidity is common to all parts of the country, although, generally speaking, the mortality tends to be highest in sparsely populated rural counties and in industrial districts, notably those associated with the textile industries of Lancashire and Yorkshire and with coal mining, and tends to be lowest in the south of England, in London and the districts around it, and in certain large towns such as Birmingham, Liverpool, and Manchester. Apart from the disturbing mortality figure, approaching 4 per 1000 births, it would appear certain that large numbers of women are injured at the time of childbirth and that this injury, however slight it may appear at the time, leads to much suffering and economic distress, none the less real because in many families it may not be ever traced to its actual source.

The difficulty of assessing the general causes which influence maternal mortality is admitted by Miss Campbell, but she has satisfied herself that the adequacy or otherwise of the professional attention given during pregnancy and at the time of birth is a weighty factor. In a large number of maternal deaths there has been at some point a failure in proper supervision. Often the omission occurs before childbirth; there has been a lack of antenatal watchfulness, and what might have been a comparatively simple event becomes one of desperate urgency. Familiar instances are the failure to handle a difficult case with due skill and judgment; failure to take satisfactory antiseptic precautions, especially when operative measures are concerned; failure subsequently to examine the patient with sufficient thoroughness and so to ensure the repair of injury. Omissions such as these may readily lead to a fatal termination. In other instances an adverse result may be almost unavoidable. For example, in an isolated district it may not be possible to obtain medical help in time; expert medical advice or hospital accommodation may not be available for a complicated case, while the patient herself may be to blame for neglecting to take reasonable precautions. Curiously enough, insanitary conditions appear to have less direct influence upon puerperal mortality than might be supposed; nor has employment of married women had direct influence upon the maternal death-rate, at any rate as far as the nature of the occupation is concerned, though the double strain of housework and outside employment may impose too heavy a burden upon the mother with diminution of her powers of resistance.

Miss Campbell's suggestions for securing reduction in puerperal mortality and morbidity are set out under three main headings: (1) Improvement in the quality of professional attendance; (2) action through the public health department of the local authority; (3) social and educational measures. Under the first heading she urges adequate education of the medical student and better training of midwives; also the

[1] Reports on Public Health and Medical Subjects. No. 25. Maternal Mortality. By Janet M. Campbell, M.D., M.S. Ministry of Health. London: H.M. Stationery Office. 1924. Pp. 112. 1s.

employment of the trained midwife for maternity nursing with the consequent disappearance of "nursing" by the unqualified handy-woman. Closer coöperation between practitioner and midwife, between professional attendants and local authority are greatly to be desired. The public health department of the local authority can assist preventive midwifery by organising ante- and post-natal care of pregnant women at maternity centres. More maternity beds are needed for observation, isolation, and treatment of complicated cases, and for the accommodation of women who cannot safely and suitably be confined at home. A sufficient service of competent midwives should be assured to women confined in their homes, if necessary by subsidy of the midwives practising in sparsely populated districts or by assisting the formation of district nursing associations. The attendance of a midwife, the assistance of a trained nurse, and the advice and treatment of a medical practitioner should be available for all necessitous patients requiring such services. Maternal deaths due to childbirth should be investigated by the medical officer of health, also all cases of puerperal infection, whether fatal or not. Amendments may be desirable in the existing provision for the notification of puerperal fever. Social and educational measures include the provision of suitable nourishment for necessitous expectant and nursing mothers, extension or modification of sickness benefit during pregnancy, and widespread propaganda.

The inquiry is not yet complete. Miss Campbell proposes to report later on the clinical aspect of mortality in childbirth. The matter deserves attention, for whereas infantile mortality has diminished by one-half during the last 20 years, maternal mortality has remained almost stationary. And the reproach is not limited to this country, but applies equally to all the English-speaking countries. If the figures can be trusted, Scandinavia provides an example to emulate.

THE PART-TIME M.O.H.

MANY of us have viewed the supersession of the part-time medical officer of health with regret, but for some time it has been evident that in communities of a certain size a whole-time administrator for public health purposes has been necessary. The borough of Enfield, we learn from the *Enfield Gazette and Observer*, is divided in its opinion as to the advisability of agreeing with the view of the Ministry of Health and appointing a whole-time medical officer; and we observe that our contemporary is advocating that one of the largest parishes in England should be satisfied with the services of a part-time medical officer on the ground of economy. The argument of economy can be carried too far. The Ministry of Health would be responsible for a large proportion of any whole-time salary; while, efficiently conducted as the sanitary business of Enfield appears to be, there may arise at any time situations with which no one but a whole-time and expert sanitarian can deal, when, if the results to the community were very expensive, the authorities would be held responsible. The part-time medical officer of health coöperates admirably with county authorities in rural neighbourhoods, but urban conditions impress upon communities the need for conformity with their similars, so that a well-staffed service may maintain the public health of the country.

A MEETING of the Fellows of the Royal Society of Medicine will take place at 1, Wimpole-street, London, W. 1, on Thursday, April 10th, at 5 P.M., with Sir William Hale-White, the President, in the chair, to meet the foreign medical officers of health now in this country, and to hear a lecture communicated by Dr. L. Rajchman, Director of the Health Section of the League of Nations, on the Health Organisation of the League. A preliminary address will be given by Mr. John Wheatley, the Minister of Health.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

LXV.

THE TREATMENT OF FUNCTIONAL DISORDERS OF THE HEART.

By the term "functional disorder of the heart" is meant a condition in which the patient suffers from symptoms suggestive of heart disease, but in which his heart and arteries are healthy. The chief symptoms of which the patient complains are breathlessness, precordial pain, palpitation, giddiness, and exhaustion; these are caused or aggravated by exertion, and are accompanied by a quickening of the pulse greater than that found in health. Other features sometimes associated are: (1) signs of defective vaso-motor control, such as flushing of the skin, or, on the other hand, coldness of the extremities occasionally with local cyanosis. Attacks of syncope may occur as the result of transitory disturbance in the cerebral circulation; (2) symptoms of functional nervous disorder, such as nervous irritability or nervous exhaustion; headache and sleeplessness are common.

It must be emphasised that the symptoms described may form part of the clinical picture of many diseases; in the early stages of phthisis, for example, the circulatory symptoms may overshadow those directly due to the condition of the lung. It is obvious that before deciding that a patient is suffering purely from a functional disorder of the heart, the physician must exclude organic disease, not only in the heart, but in other situations as well.

Treatment may be considered under four headings: (1) reassurance; (2) rest and graduated exercise; (3) drugs; (4) removal of any cause likely to aggravate the symptoms.

Reassurance.

Anxiety about the state of the heart is present in varying degree in most patients, and it is essential to remove this. Reassurance must be given wholeheartedly, if the patient is to be convinced that he has not got heart disease; to say that there is no organic disease, but that the heart is "weak," "strained," or "flabby," does not carry the necessary conviction; the patient must be made to realise that his heart is absolutely healthy. Other methods of treatment are sure to prove unavailing until the patient's mind is set at rest, and in mild cases reassurance alone may be all that is necessary.

Rest and Graduated Exercise.

Rest in bed is definitely harmful to the large majority of patients; in a few of the most severe cases it is occasionally beneficial, but must not be prolonged.

Graduated exercise is an essential part of treatment in every case, but the best method of prescribing it varies. The patient should take the maximum amount of exercise of which he is capable without experiencing actual distress; if he oversteps this limit, his condition may undergo a slight but temporary deterioration, but no permanent damage, comparable to that which might result in a case of organic heart disease, follows. The tendency in most patients is rather to under-estimate the amount of exercise of which they are capable, and it is important to decide for each individual how far this is the case. This may be judged partly by a general estimate of the mentality, and partly by some such method as the following: the patient is told to step on and off a stool until he feels discomfort; the appearance of the patient when he stops, the character of his breathing, and his pulse rate show how far his distress is real. If he appears to be a man who does not complain unnecessarily, it is sufficient to tell him to take regular outdoor exercise, preferably of a kind that has some objective, such as golf or gardening, and gradually to do more as he finds that he can.

If, on the other hand, he complains of distress before any objective signs are apparent, he is probably a man who, if left to "train" himself, will not attempt an amount of exercise sufficient to ensure the maximum degree of improvement. In such a case, the best results will follow upon making him do a series of exercises every day under supervision. This can be obtained either by the physician seeing the patient at intervals or by a masseuse trained in giving graduated exercises; but in the latter case it is important that the physician himself should give instructions as to how much exercise the patient is to do, and how quickly the amount should be increased.

Universal rules for graduating the exercise cannot be set down, but the following will be found suitable for most patients. The scheme of exercises should last 15–30 minutes, and should include one exercise lasting 2–4 minutes, sufficiently severe to cause slight dyspnœa but not actual distress. This exercise will generally be found to be one which raises the pulse to a rate between 130 and 150 per minute;[1] two minutes after the exercise is over, the rate should not be more than 10 beats above the rate counted before exercise. (It may be urged that this rule places too much reliance on the pulse rate as the mark of the first sign of distress; possibly more attention should be paid to the facial expression and respiration, but it is much more difficult to appreciate the indications that these afford than to count the pulse; for this reason the pulse rate is in most cases a more satisfactory guide for the masseuse.) The hardest exercise should be done once or twice during each treatment; the other exercises should be easier. Stepping on and off a stool is a convenient form of the hardest exercise, for it is easy to increase it by a known amount; as the patient improves it is found that the stepping has to be done at a faster rate to get the desired effect on the pulse and respiration. A further advantage of grading the exercise in this way is that it affords a rough measure of the degree of improvement, obvious not only to the physician, but also to the patient; the latter is made to realise that he is becoming capable of a greater amount of exercise in a given time, and this has an excellent mental effect. Massage itself is of no value, and the so-called "Local Heart Treatment," which consists of different varieties of massage over the precordial area, is definitely harmful; it merely directs the patient's attention to his heart, and increases the difficulty of convincing him that heart disease is not the cause of his symptoms.

Drug Treatment.

The only drug of much value is bromide, and it can conveniently be combined with arsenic. Drugs of the "tonic" type may contribute to the sense of well-being, and may in this way be useful; probably none of them directly increase the patient's capacity for exercise. Various endocrines have been advocated, particularly thyroid, but there is no very definite evidence in their favour, and personally, I have never been convinced of their usefulness. It has been clearly shown by Lewis and his co-workers that digitalis is useless.

Treatment of Conditions likely to Aggravate the Symptoms.

It is not possible in a short space to give a comprehensive list of the various conditions which may aggravate the symptoms, much less to discuss their treatment. There are few diseases, even the mildest, whose effects are not reflected to some extent in the cardiovascular system, whether it is normal or not, and if observations are made on an individual's response to effort over a prolonged period, it is found that it is impaired by such trivial causes as a bad night or a slight headache. It is obvious, too, that a surgical disability, such as flat-feet, will cause an increase of pulse and respiration rate on exercise greater than normal by imposing a mechanical disadvantage on the muscles involved or by producing pain.

[1] The rate is reckoned by counting the pulse for the first quarter minute after exercise and multiplying the result by four.

Certain conditions must, however, be particularly looked for, as being especially likely to contribute to the severity of the symptoms. Chief among these is septic absorption from such foci as the teeth, a nasal sinus, or even a "chronic appendix"; I have known cases where the eradication of a source of chronic infection has resulted in the disappearance of all cardiac symptoms without any further treatment. Any catarrh of the respiratory tract will increase breathlessness, but it is not so generally recognised what relief may be given by remedying structural conditions causing partial nasal obstruction.

Allusion has already been made to the important part played by defective vasomotor control, and the consequences of this are very apt to result from the effect on the vagus of any kind of gastric disturbance. The treatment of any coincident dyspepsia must, of course, vary in different cases, but as a rule these patients should be advised to drink between and not with their meals, to restrict carbohydrates and foods leaving a large undigested residue, such as cabbage or lettuce. Restriction in this respect, however, must not be too rigid in patients with a tendency to constipation. Such patients should also be warned against taking exercise directly after meals, particularly if they are liable to attacks of fainting. Visceroptosis is another abdominal condition that may require treatment, particularly if it is associated with a weak abdominal wall, which allows pooling of the blood in the splanchnic area, with consequent starvation of other parts of the body. Much discussion has arisen as to the part played by functional nervous disease in the production and aggravation of the symptoms, but probably most physicians would agree that while functional nervous disease may be associated with circulatory symptoms, circulatory symptoms by themselves rarely give rise to nervous symptoms other than anxiety about the state of the heart. It is important to assess the nervous factor at its proper value and to determine in every case: (1) whether the only nervous symptom is anxiety about the state of the heart; (2) whether the circulatory symptoms are primarily due to functional nervous disease, such as a general exhaustion state; or (3) whether the nervous symptoms are simply an associated condition, possibly produced by the same etiological factors as the circulatory symptoms. The answer to these questions must profoundly modify treatment, notably as regards the advisability of rest in bed; the management of the first has already been sufficiently indicated under the heading of "Reassurance"; the treatment of the other two is beyond the scope of this article.

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SHORT COURSE OF INSTRUCTION FOR MAGISTRATES.—A short course of instruction for magistrates in connexion with their duties under the Lunacy and Mental Deficiency Acts was held at the Royal Sanitary Institute, under the auspices of the Central Association for Mental Welfare, from March 18th to 21st. It was the first course of the kind to be given in this country and aroused much interest, and although the number of justices attending was relatively small, it is felt that a beginning has been made in what may prove to be a work of very great importance. In all, 28 justices, men and women, took part in the course; the majority of these came from various parts of England, but one was from Nigeria and two came from South Australia. The instruction given consisted of eight morning lectures, supplemented by afternoon visits of small groups to various prisons, remand homes, mental hospitals, and other institutions. Sir Leslie Scott, K.C., M.P., gave the inaugural lecture on Legal Responsibility and Mental Deficiency; Dr. J. G. Porter Phillips gave three lectures on mental disorders, dealing especially with their medico-legal relationships; Dr. A. F. Tredgold dealt with the subject of mental deficiency in three lectures, dealing in detail with the subject of defective delinquents; and Dr. F. C. Shrubsall gave one lecture on Legal Administration under the Mental Deficiency Act. It was felt that the course proved a means of giving valuable information on the subjects of lunacy and mental deficiency, thoroughly justifying the new departure, and it is hoped to repeat it at a later date. Information as to future courses may be obtained from the Hon. Secretary, Central Association for Mental Welfare, 24, Buckingham Palace-road, S.W.1.

Special Articles.

THE LEAGUE OF NATIONS:

FIRST SESSION OF THE PERMANENT HEALTH COMMITTEE.

THE League Health Committee met in Geneva from Feb. 11th to the 21st. This was the first meeting of the Health Committee of the permanent Health Organisation that was formed at the end of last year. At this meeting rules of procedure were adopted, providing for regular sessions twice a year, for the formation of temporary or standing subcommittees, and for the use of the services of experts in connexion with a meeting of any of these committees or of the Health Committee itself. Thus the organisation is rendered elastic and every opportunity afforded for establishing contact with national health administrations or private organisations working on the same subjects.

Dr. Th. Madsen, head of the Copenhagen Serum Institute, and formerly chairman of the Provisional Health Committee, was elected chairman of the Permanent Committee. The President of the Advisory Council, who is ex-officio a member of the Health Committee, was also, it was decided, to be ex-officio Vice-President of the Health Committee, in order to ensure close contact between the Office International d'Hygiène Publique and the Committee. Dr. Velghe, head of the Belgian Health Service, at present holds this office. In view of the increase of work and responsibility connected with the Health Organisation, it was decided to have two further Vice-Presidencies, to be held for one year without re-election, thereby ensuring rotation among the members of the Committee. Sir George Buchanan, who was Vice-President of the Provisional Health Committee, was elected, as was Surgeon-General H. S. Cumming, chief of the United States Public Health Service. The Committee also nominated three out of the four assessors which it is, by its constitution, allowed to select. The final appointment rests with the League Council. The three assessors chosen are Dr. Chodzko, former Minister of Health of Poland; Dr. Bernnard Nocht, Director of the Hamburg Institute of Tropical Diseases; and Dr. Alice Hamilton, of Harvard University Medical School.

The members of the Health Committee are at present:—

France.—Prof. Léon Bernard, Chair of Medicine, University of Paris; Dr. L. Raynaud, Inspector-General of the Algerian Health Service.
Great Britain.—Sir George Buchanan, C.B., M.D., Senior Medical Officer, British Ministry of Health.
Switzerland.—Dr. H. Carrière, Director of the Federal Health Service.
Brazil.—Dr. Carlos Chagas, Director of the Oswaldo Cruz Institute.
Poland.—Dr. Chodzko.
United States.—Surg.-General H. S. Cumming, Chief of the Public Health Service; Dr. Alice Hamilton, Harvard University Medical School.
Egypt.—Dr. A. Granville Pasha, President of the Maritime Health Board.
Holland.—Dr. Jitta, President of the Board of Health.
Portugal.—Prof. Ricardo Jorge, Director-General of Public Health.
Japan.—Mr. Shiko Kusama, Japanese Office for the League of Nations (until appointment of Japanese member).
Italy.—Dr. A. Lutrario, Director-General of the Health Administration; Prof. Ottolenghi, Siena University.
Denmark.—Prof. Th. Madsen, Director of the State Serum Institute.
Peru.—Dr. P. Mimbela, Chair of Medicine.
Germany.—Prof. B. Nocht, Director of the Hamburg Institute of Tropical Medicine.
Spain.—Prof. Gustave Pittaluga, Chair of Medicine, Madrid.
Belgium.—Mr. O. Velghe, Director-General of the Health Service.

The Work of the Committee.

From the point of view of work this session was the seventh meeting of the League Health Committee and continued the work already undertaken by the Provisional Committee. One of the most important subjects, and a fundamental task of the Health Organisation as a whole, is the development of the service of epidemiological intelligence and public health statistics.

Epidemiological Intelligence.—Thanks to the financial aid of the Rockefeller Foundation, it has been possible greatly to extend this work, so as to make it embrace most of the countries of the world. Plans are being laid to "speed up" the receipt of information from the various national health administrations, by the substitution of cable despatches for notification by post. In other ways the service is being organised so as to make it fulfil its grand purpose—maximum usefulness to the national health administrations.

Interchanges of Public Health Personnel.—The system of bringing together picked men from the different health administrations and enabling them to study the sanitary organisation of one or two countries or, in the case of specialists, of the way a certain disease is dealt with in several countries, was reviewed at the present session and plans laid for the year 1924. The system of interchanges has now been in existence some 15 months and is beginning to assume permanent and organised lines. For one thing, it has now been possible to prepare the time-table and details well in advance and to issue the programme of the interchanges for 1924 in the form of a printed handbook. The national health administrations in whose countries the interchanges are taking place are now also profiting by the experience gained in the past to perfect the arrangement of the interchanges, and several have begun in this connexion to issue handbooks on various aspects of their national health service, as well as short, general accounts of the health legislation and administration of their countries. Moreover, candidates are now selected well in advance and taken so far as possible from "strategic" posts in their respective health administrations, thereby making certain that the maximum benefits will accrue from the experience gained in interchanges, and that the candidate will be prepared for the work he is to do.

The Far Eastern Report.—The Health Committee, in order to extend its service of epidemiological intelligence to the Far East, as proposed in the report of the Mission sent to the Far East in November, 1922, has recommended to the League Council that an epidemiological intelligence office should be set up at some convenient port in the Far East, for the purpose of collecting and communicating periodically information as to the incidence and development of infectious diseases, particularly in ports and their vicinity. The report embodying the findings of the Mission to the Far East, and particularly the recommendation as to a sanitary convention between Far Eastern States, will be communicated to the Governments concerned for their observations. The replies of the Governments will subsequently be studied by a special subcommittee.

The Epidemic Commission.

The Health Committee took note of the fact that the special emergency work of the Epidemic Commission in Poland and Greece was now concluded, and that the activities of the Commission were being turned more and more into the channels of inquiry and investigation which are part of the normal rôle of the Health Organisation. Thus, while the budget of the Commission for its special work in Poland and Greece was made up from voluntary contributions, the last assembly voted a sum of Fr.50,000 on the regular budget of the Health Organisation to permit of the Epidemic Commission continuing its inquiries and epidemiological research work. It was decided that part of these funds should be used by the Com-

mission for collaborating with the Russian health authorities in their epidemiological researches concerning the typhus epidemic that devastated Russia immediately after the war, as well as their inquiries into cholera. The Commission will also take part in investigating the epidemics of plague that have been reported from the Kirghiz Republic and Kalmuk Territory in Russia.

The Health Committee further expressed its satisfaction at the resolution of the fourth assembly, which, taking note of the fact that the Epidemic Commission's work during times of acute distress was likely to be arrested for lack of funds if the Commission were solely dependent upon voluntary contributions, recommended that the Council should in case of need study what resources could be placed at the disposal of the League Health Organisation to enable it "to intervene immediately through the intermediary of its Epidemic Commissioners in the event of sudden epidemic outbreaks of exceptional importance which might involve political consequences." This resolution was taken as satisfying to a large extent a request of the provisional Health Committee that a small fund should be kept by the League at the disposal of the Epidemic Commission for emergency work in preventing the spread of epidemic diseases where such measures were suddenly and urgently called for in the interests of the public health of the world.

Combating Malaria.

The Committee adopted the report of the subcommittee appointed last June to suggest methods of coördinating the campaign against malaria being conducted by a number of European States as a result of the aggravation of this disease in the years succeeding the war. A questionnaire drawn up in conjunction with malaria experts in the various countries is to be sent to the health administrations of European countries affected by malaria and the replies studied by a subcommittee composed of some members of the Health Committee and malaria experts coöpted from outside. In the light of the information received and other studies undertaken by the Health Committee a general report on malaria in the countries affected will be drawn up, and a programme of prophylactic measures outlined. The Health Committee will thus be in a position to furnish advice to Governments which consult it on the subject. Such advice has already been requested by the Albanian, Greek, and Persian Governments. One of the Epidemic Commissioners has already presented a preliminary report based on an investigation of conditions in Albania, and the Health Committee has now authorised a further and more extended investigation in both Albania and Greece, to enable it to furnish the Albanian and Greek Governments with the technical advice for which they ask.

The Persian Government's request, with which it is also hoped to comply, is more general and involves a sanitary survey of the country as a whole where, it is stated, a health service hardly exists and diseases of all kinds, particularly malaria and syphilis, but also cholera, influenza, bubonic and pneumonic plague, typhus and relapsing fever, small-pox, intestinal disease, trachoma, and typhoid are widespread. Cattle disease, notably anthrax, is also said to be very prevalent and the whole situation characterised as appalling. Health conditions in Persia are important to surrounding countries, such as Turkey, Mesopotamia, Russia, and India, and particularly so in view of the Moslem pilgrim routes from the Far East to Mecca.

Quinine Supplies.—A further aspect of the problem of malaria now taken up by the Health Section is the question of quinine supplies. At present the total quantity of quinine produced in the world is 600,000 kg. per annum, made in 14 factories. It is doubtful whether this quantity is sufficient for the world's needs in view of the grave increase of malaria since the war. Consequently, it is suggested that if inquiries and investigations by the League Health Organisation appeared to warrant such a course, a conference should be held of representatives of the health departments of countries in which malaria is an important and urgent problem, to consider the possibility of increasing the supply, and cognate questions.

Cancer Investigation.

The Health Committee decided to continue the work of the subcommittee for investigating the pronounced differences in certain forms of cancer mortality revealed by the vital statistics for England and Wales, Holland and Italy. This inquiry, which is being conducted in connexion with the big national inquiries started in various countries, such as England and Italy, will, it is hoped, reveal to what extent the observed increase in cancer is real and how far due to better diagnosis, completer records, &c., as well as make possible comparisons between the statistics of different countries, and so widen the area available for the investigation of such matters in the future.

Anthrax.

A mixed subcommittee of the Consultative Commission of Industrial Hygiene of the International Labour Organisation and of the Health Committee will be formed to investigate the efficacy of procedures of disinfection.

Opium.

The Committee decided, on the basis of the report of its subcommittee, that 450 mg. per head per year might be considered a provisional maximum amount of raw opium (containing on an average 10 per cent. of morphine) for the medical and scientific needs of countries possessing a well-developed medical service. In any case, this figure, given at the request of the League Opium Committee, was considered to be only a rough guide for estimating what fraction of the present world production of opium could be considered necessary for medical and scientific purposes.

Standardisation of Sera and Biological Products.

The Committee noted that the system of checking the various national units of antidiphtheria serum by the international unit, of which supplies are kept at the Copenhagen Institute, was working well, and that this institute had already tested the American, British, and German units and found them identical. Final agreement concerning a unit for tetanus antitoxin is now in sight, and the unit proposed is half the existing American unit. Investigations of dysentery, pneumococcus, and other sera are still proceeding. It was decided to add the investigation of anthrax and Malta fever sera to the work already undertaken.

During the year 1923 very active research was carried on into the sero-diagnosis of syphilis, culminating in a conference at Copenhagen, where the directors of several institutes, accompanied by their technical assistants, engaged in joint laboratory work for the purpose of comparing and coördinating their methods and tests. In connexion with this work the Committee passed a resolution pointing out that, in view of the great social gravity of the disease, blood tests for syphilis should be carried out only by highly experienced workers in specially organised laboratories—that is, in conditions permitting careful checking of the results obtained and minimising the possibility of error. For the same purpose laboratories engaged in this work should keep in close touch with hospitals for venereal disease, so that laboratory tests could be checked by clinical symptoms. Finally, the Committee's resolution insists upon the importance of concentrating these tests in laboratories where they are made free of charge and that afford every technical guarantee to the health administration of the State concerned.

As regards biological products, the Committee noted that the work of standardising internationally the therapeutic value of this class of drugs was being developed methodically, and that particular attention was being paid to the question of how insulin is being put on the market in various countries.

THE ASSOCIATION OF SCANDINAVIAN SURGEONS.

IN the summer of 1893 the first meeting of the Association of Scandinavian Surgeons was held in Gothenburg, and since then the membership of this Association has grown to between 300 and 400, including practically all the most distinguished Scandinavian surgeons. The fourteenth meeting of this Association was held in Stockholm last summer, and its "Forhandlinger," or transactions, have been published this year by the Association's secretary, Prof. P. Bull, of Christiania. The meeting was held under the presidency of Prof. H. Forssner, of Stockholm; and Prof. T. Rovsing, of Copenhagen, was elected as his successor. The next meeting of the Association will be in 1925 in Copenhagen. The following three main subjects have already been chosen for discussion in 1925: (1) The treatment of acute osteomyelitis and its sequels, (2) the treatment of non-tuberculous diseases of the uterine appendages, and (3) tuberculosis of the kidneys and urinary tract. In connexion with the last-named subject, the Association has organised an inquiry among Scandinavian practitioners as to their experiences of urinogenital tuberculosis, and the information thus obtained will be discussed in 1925. Thanks to their polylingual accomplishments, Scandinavian surgeons derive their inspirations from many sources, and it would be as correct to call their surgery cosmopolitan as Scandinavian. But a perusal of the "Forhandlinger," which runs into several hundred pages, reveals so much evidence of independent research and progress on the part of Scandinavian surgeons that it would be obviously unfair to regard their work as being chiefly inspired from without. The three chief subjects discussed in 1923 were: (1) The treatment of fractures of the neck of the femur, (2) the place of Cæsarean section in obstetrics, and (3) the treatment of empyema.

Treatment of Fractures of the Neck of the Femur.

The two opening papers on this subject were read by Prof. R. Faltin, of Helsingfors, and Dr. U. Lindgren, of Upsala. The former dealt chiefly with the literature and the theoretical side of the subject, while the latter devoted himself mainly to the end-results obtained at his hospital. Prof. Faltin's paper was a scathing criticism of the attitude hitherto commonly adopted towards this group of fractures which have not been classified, but have been, in his view, lumped into one lot over which ignorant pessimism has brooded. Prof. Faltin's first step has been to draw up an elaborate scheme of classification based on Kocher's old clinical classification and supplemented by the modern evidence of the skiagram. The only good thing to be said of the attitude of the past generation of surgeons towards the treatment of this group of fractures is that few of them were pleased with it. It is at present difficult to ascertain where they went astray because their statistics do not, as a rule, discriminate between the various kinds of fracture of the neck of the femur. Though the treatment that is suitable for one kind may be quite unsuitable for another, Prof. Faltin urges as a general rule that the first aim should be the restoration of function, and this is generally best attempted by at once setting the fracture, the broken parts being restored as closely as possible to the normal position. This generalisation might seem a truism, but as late as 1921 the American, Whitman, wrote: "The ideal object of treatment, restoration of form and function, is rarely to be attempted or even sought. The first indication is to save life, the second to get union, the third to correct or diminish displacement." With regard to impacted fractures, whether they be lateral or median, Prof. Faltin is in favour of readjustment instead of leaving the impaction alone in the hope that it will form the starting point of satisfactory bony union. It is unwise to assume that an impaction is firm or, indeed, that it exists, for the X rays may suggest impaction, although the broken fragments are only lightly hooked in each other. As for the best form of immobilisation, there is much to be said in favour of Whitman's immobilisation in plaster with the limb fixed in the position of maximum abduction and inward rotation in certain kinds of fracture, the capsule of the joint being employed in this position to immobilise the fracture. This treatment is particularly suitable for young persons with median fractures. Prof. Faltin has little good to say of treatment with splints and bandages or early ambulant treatment based on the assumption that there is little to be gained by prolonged immobilisation.

Dr. Lindgren's paper showed that, according to earlier publications, the mortality from this group of fractures, subjected to different kinds of treatment, ranged from 7 to 31 per cent., the "good" results ranging from 9 to 89 per cent., a width of range suggesting that the word "good" was not used with a uniform meaning. Dr. Lindgren's own material consisted of 95 cases, 21 of which terminated fatally. Of the surviving 74 patients, practically all were re-examined, and as a result of this re-examination Dr. Lindgren comes to the conclusion that, provided the patient is not too old and infirm, active, but not operative, treatment should at once be instituted, the displacement of a median fracture being exactly corrected, and the limb being put up in plaster in a position of inward rotation and great abduction. In the case of lateral fractures, immobilisation may be effected by traction and extension instead of by plaster. In either case no weight should be put on the limb before six months.

In the discussion which followed, Dr. O. Löfberg, of Malmö, gave an account of 306 cases, in 212 of which correction of displacements had been followed by immobilisation in plaster, the limb being abducted and inwardly rotated. Of these 212 patients, 199 were discharged from hospital, and 188 were subsequently re-examined. In 83, or 67 per cent., there was osseous union, and the patients were able to walk perfectly or comparatively well.

Prof. J. Nicolaysen, of Christiania, traced the changes of fashion in the treatment of these fractures of late years, and he observed that the fashion of extension, which enjoyed its greatest vogue about 1900, had given poor results, as far as the median fractures were concerned. For the past 12 years he has adopted Whitman's treatment by immobilisation in plaster, but his results have not been good.

Dr. E. Perman, of Stockholm, illustrated the problem from the insurance and workers' compensation point of view. His material consisted of 111 cases investigated under the Swedish insurance scheme in the period 1918–1920. As many as 36 of the patients suffered no permanent invalidism, and only 51 were definitely incapacitated to a greater or less extent. In the remaining 24 cases the incident, from the insurance point of view, was not yet closed.

Several other speakers published statistics and related their experiences of this group of fractures, and it was evidently the general opinion of the meeting that the passive pessimism shown in the treatment of these cases in the past should be vigorously revised in favour of accurate diagnosis and classification, immediate correction of deformities provided the patient's vitality can stand the strain, immobilisation in plaster, and maintenance of this immobilisation for a very long time. This last point raised the question of hospital accommodation, while one speaker pointed out that the climate of the Scandinavian countries provides outbreaks of these fractures in epidemic dimensions.

Treatment of Empyema.

The opening papers on this subject were by Dr. P. N. Hansen, of Copenhagen, and Dr. Einar Key, of Stockholm. Many of the papers on the same subject read by other surgeons dealt with empyema statistics running into three figures, and the debate centred more and more on the comparative merits of the open and closed methods of treatment. Little was

said of the closed method by suction in the first two papers, but in the discussion that followed Prof. T. Rovsing recalled the meeting of the Association in 1913, when he and Dr. Ove Wulff gave statistical evidence of the superiority of the closed over the open method, the death-rate being reduced from 24 to 14 per cent., the incidence of chronic empyema from 40 to 7 per cent., and the duration of treatment much reduced. The speakers who followed concurred on the whole with Prof. Rovsing, and even those who had found little difference in the mortality were inclined to prefer the closed method with suction through a Pezzer's catheter because of its comparative cleanliness, economy in dressings, and absence of that general discomfort entailed by the open method.

The Place of Cæsarean Section in Obstetrics.

The opening paper by Prof. K. Brandt, of Christiania, dealt with 50 Cæsarean sections performed between 1919 and 1922. In 16 cases the indication was a narrow pelvis, in 11 it was placenta prævia, in 6 it was premature detachment of a normally situated placenta, and in 5 it was eclampsia. In the remaining 12 cases a miscellaneous collection of indications existed. With regard to placenta prævia as an indication, he raised an ethical point which is of special interest to teachers. Being attached to a teaching hospital in which both midwives and medical students are trained, Prof. Brandt felt it incumbent on himself often to practise and teach those procedures which, though perhaps only second-best in a hospital, ought to be adopted by midwives and doctors in general practice. Under such extra-hospital conditions, it is obvious that Cæsarean section is seldom feasible. So at his hospital Prof. Brandt has practised and taught Braxton Hicks's version as the best treatment for most cases of placenta prævia. But the results obtained with Cæsarean section in 11 cases of placenta prævia were so good (no maternal and only one fœtal death) that he admitted the superiority of this procedure under suitable conditions over all others. His own views, and those of speakers who followed, left little doubt that, with only a few exceptions, Cæsarean section has gained much ground in the Scandinavian countries during the last few years.

Other Obstetrical Papers.

In addition to the full-dress discussion on Cæsarean section, papers were read on several other obstetrical subjects. Prof. Brandt pleaded for the identification of senile pyometra with cancer of the uterus, and for the routine early removal of the uterus on this indication without the wasting of time entailed by curetting and cauterising. In the past he had often committed this error, finding out too late that an overlooked malignant growth had extended rapidly after his palliative tinkering. In another paper he ridiculed, with the support of statistics, the tendency of German obstetricians to regard 2000 g. as the weight level below which new-born infants cannot be considered viable. Of 348 living infants weighing 2000 g. or less at birth, he had found that 117, or 33·6 per cent., had died within 14 days, but the remainder had been discharged from hospital in perfect health and with every prospect of growing up. A statistical paper by Dr. O. A. Boije, of Helsingfors, was a defence of plugging the uterus for post-partum hæmorrhage and a refutation of the teaching that a tampon in the uterus promotes infection. In 114 out of 11,442 confinements he had plugged the uterus for post-partum hæmorrhage, and none of these cases had terminated fatally. The fact that they showed a comparatively high puerperal morbidity (13·1 per cent. as compared with 5·3 per cent. for all the confinements) might well be traced to other factors than the plugging—i.e., to the atony of the uterus, which in itself favours retention and sepsis, and to the frequent use of forceps, which had been applied in 27·2 per cent. of the cases treated by plugging. A paper by Dr. B. Lundqvist, of Stockholm, dealt with the conduct of labour delayed by primary uterine inertia. The chief lesson of his statistics was that, when the membranes have ruptured, the sooner labour is hastened artificially by forceps the better, provided dilatation has proceeded far enough for this purpose.

Other Surgical Papers.

The following list will give some idea of the wide range of the subjects discussed: Sauerbruch's artificial hand, the treatment of Pott's disease and of congenital dislocation of the hip in adults, bone transplantation, lymphogenic, metastatic osteitis, the treatment of osteomyelitis, the pathogenesis of torticollis, Lane's osteosynthesis, Kielland's obstetric forceps, the genesis of tar cysts of the ovaries, supernumerary breasts, idiopathic dilatation of the œsophagus, the pathology of anal fistula, sarcoma of the stomach, the surgical treatment of trigeminal neuralgia, the diagnostic value of Wohlgemut's diastase reaction in acute diseases of the pancreas, and the operative treatment of deformities of the lower jaw, the diagnosis of intestinal obstruction by gall-stones.

The list may be further extended by valuable discussions upon the stopping of brain cysts with fat grafts, periarterial sympathectomy, operations for free foreign bodies in the posterior portion of the knee-joint, laxatives and restrictions of diet before and after operations, traumatic chyloperitoneum, the mobilisation of joints, nitrogen retention and excretion in the subjects of hypertrophy of the prostate, and torsion of the testicle. We have also such questions considered as the reason why torn and crushed nerves heal less satisfactorily than clean-cut nerves, the topical diagnosis by exclusively clinical methods of chronic ulceration of the stomach and duodenum, the value of basal metabolism investigations in Graves's disease, the clinical diagnosis of this disease, the prophylaxis of post-operative retention of urine, the value of total resection of the bladder for carcinoma and of the spleen for pernicious anæmia, and the early diagnosis of embolism of the renal arteries.

The papers and the discussions thereon are published in one or other of the Scandinavian languages, and for surgeons unfamiliar with these languages, but conversant with French and German, as well as English, much of the information in these "Forhandlinger" will be available when some of their contents are again published in one or other of the Scandinavian *Acta*.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

The Dick Test.

LAST year Drs. George F. and Gladys H. Dick reported the successful inoculation of scarlet fever into two out of ten volunteers.[1] The organism used on that occasion was a particular strain of streptococcus. Now using a filtrate of this same culture they claim to be able to determine susceptibility to scarlet fever in exactly the same way that the Schick test determines susceptibility to diphtheria. An intradermal injection of a suitable dilution of this filtrate was observed to yield the following results: In persons who gave no history of having had scarlet fever 41·6 per cent. were positive (i.e., susceptible); 65 convalescents from scarlet fever were either entirely negative or else very slightly positive. It was further discovered that the injection of serum from convalescent patients into normal individuals inhibited the reaction whether the serum was given previously or at the same time as the inoculation of the specific filtrate. In two instances in which it was possible to observe the test before and after an attack of scarlet fever it was found to give a positive reaction in the former and a negative reaction in the latter case. These observations are somewhat out of harmony with the research of other investigators that had tended to incriminate a filtrable virus, but the results obtained already are sufficiently important to call for a confirmation or contradiction by other immunologists.

[1] Jour. Amer. Med. Assoc., 1923, lxxxi., 1166.

To Control the Sale of Biologic Products.

On Feb. 28th a Bill was introduced into Congress to amend the Act of 1902 "to regulate the sale of viruses, serums, toxins, and analogous products." The amendments are naturally in the sense of strengthening this Act, which was perhaps rather in need of more rigid enforcement. The Secretary of the Treasury is empowered to refuse a licence to manufacturers if in his judgment the public interest would thereby be enhanced. No packages may be sold unless either an official standard or test has been established, or else the words "No U.S. Standard of Potency" shall appear in plainly legible type on the outside label or wrapper. No product shall be licensed which bears a deceptive label. Whether or no all these conditions can be enforced it is not easy to judge, but it is satisfactory that attention should be drawn again to the importance of standardising sera and vaccines not only in the United States but throughout the world.

Explosion of Anæsthetics.

The adoption of ethylene gas as an anæsthetic was announced more than a year ago. Since that time its use has spread gradually to most parts of the United States. Last week there was reported from the Union Memorial Hospital at Baltimore an accident which draws attention to a possible danger in the use of this anæsthetic, at any rate when administered with nitrous oxide. In this case the ethylene had been superseded for some reason by laughing gas, though at the time of the explosion the latter was turned off. A carbuncle had been excised and the surgeon was cauterising the wound with a platinum cautery. The patient died an hour after the explosion, death being attributed to pulmonary hæmorrhage. The anæsthetist's face was slightly burned and his hair singed, but no one else in the room received any injury. There are obviously explosive possibilities in this mixture of gases which should lead to caution in their use.

A MODEL SCHEME FOR A DIPLOMA IN PSYCHOLOGICAL MEDICINE.

As long ago as 1910 the President of the Medico-Psychological Association of Great Britain and Ireland addressed a letter to all universities and other examining bodies, urging the necessity for facilities being provided for post-graduate teaching in psychological medicine at all medical schools, and for the granting of a special diploma to candidates after examination, as had already been done with such conspicuous success in public health and tropical medicine. Largely as the outcome of that letter, diplomas in psychological medicine, or psychiatry, have been created at many universities and colleges, and definite progress has been made in the better systematic and scientific training of medical officers serving in mental institutions and others engaged in psychological medicine. Much, however, remains to be done. Not until every centre of medical teaching has adequate facilities for tuition in psychological medicine in the shape of a department or clinic in psychiatry can the treatment of disorders and diseases of the mind rise to the level of that of physical disorders and diseases. The Council of the Association, having regard to recent developments of psychiatry and practical experiences already gained in this matter, has prepared, through its committee on Post-graduate Teaching and Diploma in Psychological Medicine, a revised scheme of post-graduate work and subjects, which it is considered would constitute a suitable course for a diploma in psychological medicine. Its provisions are as follows:

1. The candidate must be already a registered medical practitioner.

2. The candidate may present himself for examination on the subjects detailed under Part I. of the curriculum (see para. 4) immediately he has concluded the prescribed course of instruction or can produce such other evidence of diligent study of the subjects to be examined upon as may be demanded. Part I. must be passed save by special permission at least three months prior to entering for examination on Part II. of the curriculum.

3. The candidate may not present himself for examination on the subjects detailed under Part II. of the curriculum (see 4) until he has been a registered medical practitioner for not less than two years. He must, subsequently to qualification, have been in the practice of an approved mental hospital for not less than two years, or have attended for six months at a hospital, mental or general, for clinical instruction in psychological medicine, and subsequently have held a resident appointment at an approved mental institution or mental wards of a general hospital for not less than six months. In both cases he must produce a certificate from a recognised source that he can apply his theoretical knowledge and has practical acquaintance with, and is well and adequately versed in, the current clinical methods of examination and treatment of nervous and mental disorders. In the case of mental deficiency the certificate should include a practical knowledge of the various intelligence tests and other methods of ascertaining the degree of mental defect. He must also produce evidence of having attended, subsequently to qualification, courses of lectures and demonstrations, or such other evidence of diligent study of the subjects upon which he presents himself for Part II. of the examination, as may be demanded.

4. *Curriculum.*—Part I.: (*a*) Anatomy, histology, and physiology of the nervous system, including the autonomic system. Anatomy and physiology of the endocrine glands. Chemistry and cytology of the cerebro-spinal fluid. (*b*) Psychology, systematic and experimental. Part II.: (*a*) Morbid anatomy, histology, and pathology of the systems mentioned under Part I. (*a*). Post-mortem and laboratory technique. (*b*) Neurology and clinical neurology. (*c*) Psychiatry (including the psycho-neuroses), clinical psychiatry and the medico-legal relationships of mental disorders and mental deficiency. In addition, the candidate for Part II. will need to show special knowledge of any one subject, to be selected by him from the subjects comprising Part I. or Part II.; or may choose to be examined in any one of the following subjects: (*d*) Mental deficiency and the mental disorders of childhood and adolescence, and the duties of school medical officers in relation thereto. (*e*) Bacteriology as applied to mental and nervous disease. (*f*) Psycho-pathology and psychotherapy. (*g*) The principles of diet, vitamins, and basal metabolism, and their application. (*h*) Eugenics, and vital statistics. (*i*) Criminology and the jurisprudence of criminal responsibility.

5. The diploma, by request, may be endorsed that special knowledge has been shown in the subject selected.

6. It is suggested that any compulsory attendance at lectures and demonstrations and clinical courses should be limited to the subjects detailed for Part II., and that the course for Part I. or Part II. should not exceed eight weeks.

The Association is fully aware that any action taken will need to be in line with the established practices and traditions of particular universities or examining bodies, but suggests that such bodies may give careful consideration to this model scheme.

MUNICIPALISATION OF MILK-SUPPLY IN MANCHESTER.—The Manchester Labour Party has prepared a report on the municipalisation of the city's milk-supply, to be brought before a conference to be held this month. The facts and arguments in this report are largely taken from a review written in 1920 by the present Lord Mayor when acting as chairman of the public health committee. In view of the deplorable condition of Manchester milk, together with the disastrous results on the young life of the city, the suggestion is to take the whole sale and distribution of milk out of private hands and place them under the jurisdiction of the city council. Unified control with a monopoly of sale would, it is alleged, give powers of inspection from the farm to the consumer, eliminate overlapping, and reduce cost. Other points in the programme are:—(1) Adequate inspection of farms in the rural areas, with compulsory drainage of shippons. (2) Establishment of country depôts where the milk can be strained, cooled, and bottled. (3) Special railway facilities; fleet of transport motors. Use and extension of tramways. (4) Milk centres in the city, to which the milk shall be directly consigned, from which it will be delivered to the consumer by light handcarts with compartments to hold the bottles. (5) Shops for the serving of customers, to be used as depôts for the replenishment of the dandies. Dairy produce made from the surplus milk at the country depôts to be sold. (6) Existing dairymen to be compensated.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg.-Comdr. E. Moxon-Browne has been appointed senior medical officer of the light cruiser *Concord*.

The following appointments have been notified: Surg. Capts.: H. C. Whiteside, to the *Ganges*, for R.N. Sick Quarters, Shotley; L. M. Morris, to the *Victory*, for Haslar Hospital; and T. Creaser, to the *President*, for hospital course. Surg. Lt.-Comdr. S. R. Johnston, to the *Britannia*, for sick quarters, R.N. Barracks, Dartmouth.

ARMY MEDICAL SERVICE.

ARMY RESERVE OF OFFICERS.

Capt. N. M. Goodman, late Reg. Army Res. of Officers, Worc. R., to be Capt.

MILITIA.

Capt. E. A. Wilson to be Maj.

TERRITORIAL ARMY.

Capt. J. R. Griffiths (late Cheshire R.), to be Lt., and relinquishes the rank of Capt.

Lt. F. W. Martin to be Capt.

Lt. A. T. Sloan resigns his commn. and is granted the rank of Capt.

Capt. W. T. Gardiner from Gen. List to be Capt.

Supernumerary for service with O.T.C.—Maj. A. M. H. Gray to be Lt.-Col.; Maj. F. A. E. Crew to be Lt.-Col; and Capt. (Local Maj.) C. F. Searle to be Maj.

INDIAN MEDICAL SERVICE.

Col. R. Heard, K.H.S., has been selected for the appointment of Surgeon-General in Bengal, in succession to Maj.-Gen. B. H. Deare, C.I.E., K.H.S.

Majs. W. F. Brayne, S. W. Jones, J. Anderson, and G. G. Hirst to be Lt.-Cols.

MENTIONED IN DESPATCHES.

A *London Gazette* notice, dated March 28th, states that the name of the undermentioned officer is to be added to those brought to notice for distinguished and gallant services and devotion to duty by Lieut.-Gen. Sir J. G. Maxwell, commanding the Forces in Egypt, in his despatch of March 16th, 1916—namely, Maj. G. Hall, R.A.M.C. (T.F.).

THE NAVY AND DENTAL HYGIENE.

Attention is called in recent Fleet Orders to the importance of dental fitness. Arrangements are already in existence for the treatment by civilian dental surgeons of naval personnel where no naval dental officer is available at Army and Air Force dental centres. Dental officers will, it is stated, supplement individual instruction by lectures to patients on Oral Hygiene

TERRITORIAL ARMY NURSING SERVICE.

Regulations were issued with the Army Orders for February in regard to the Territorial Army Nursing Service, of which Queen Alexandra is president. The Service consists of the Matron-in-Chief, 23 principal matrons (4 in London, 2 in Glasgow, and 1 in Aberdeen, Edinburgh, Newcastle, Leeds, Sheffield, Manchester, Liverpool, Lincoln, Leicester, Birmingham, Oxford, Cambridge, Cardiff, Bristol, Portsmouth, Plymouth, and Brighton respectively), matrons, assistant matrons, sisters, and staff nurses. A candidate must be between 23 and 35 years of age, must be single or a widow, of British parentage or a naturalised British subject, and must possess a certificate of not less than 3 years' training in a civil general hospital of not less than 100 beds or a Poor-law infirmary recognised by the Ministry of Health as a nurses' training school. Senior members will be liable to be called up periodically for training in a military hospital, when they will receive army pay and allowances. On mobilisation members of the service will receive pay, according to rank corresponding to that of the Q.A.I.M.N.S.

DEATHS IN THE SERVICES.

Sir Walter J. Buchanan, K.C.I.E., I.M.S. retd., who was Inspector-General of Prisons in the Bengal Presidency from 1902 until 1919, died on March 23rd at the age of 62. He graduated in Arts and Medicine at Trinity College, Dublin, in 1887 and entered the Indian Medical Service in the same year. He served in the Chin-Lushai Expeditions, 1889–90 (medal with clasp), and retired with the rank of Lt.-Col. He edited the *Indian Medical Gazette* at Calcutta from 1899 to 1919, and was the author of a manual of Jail Hygiene.

Correspondence.

"Audi alteram partem."

CLINICAL RESULTS IN DEEP X RAY THERAPY.

To the Editor of THE LANCET.

SIR,—A consideration of the discussion on this subject at the Royal Society of Medicine[1] might easily give rise to a pessimism not, I think, fully justified. Some of the speakers—and among them one who had formerly been most enthusiastic—were of opinion that the percentage of successes by modern methods was but little greater than that obtained some years ago. The term "modern methods" was intended to refer chiefly to the Erlangen technique. It is, however, only fair to point out that the chief claim from this clinic was made concerning only one special form of cancer—namely, carcinoma of the cervix uteri; and then only with regard to early cases such as are, in this country, invariably operated on. If the public in Great Britain came to believe that the high percentage of "five-year" cures thus claimed (75 per cent., I think) could be obtained by the application of their method to other forms of cancer not at an early stage, this was no fault of the Erlangen authorities. The admitted fact that the treatment caused very considerable general disturbance led me from the first to regard it as unsuitable, at least in the single dose form, for advanced cases, and still less applicable for use as an aid to surgery. With respect to the latter, Mr. Sampson Handley—who is certainly the last person who could be accused of bias against X rays—said he was not sure that "deep X ray therapy" (by which he meant the massive dose method) was the sort of help the surgeon would ask. This attitude is not to be wondered at. For the surgeon must oppose anything which reduces his patient's vitality. He may reasonably ask one or both of two things from the radiologist: (1) that an inoperable case should be rendered operable; (2) that something be done to reduce the likelihood of recurrence after operations. He also requires that these things be accomplished without in any way depressing the patient. If, on the contrary, the latter can be made more fit in the process he is duly grateful.

Now, as a matter of incontrovertible clinical expression, it is often possible to make an inoperable case operable by comparatively small doses of X rays given every other day for a few weeks. At the end of which time, if pain has been complained of, it is less; and the patient feels much fitter than when the treatment began. Often weight has increased. It is obvious that no one would make a statement such as this unless, as is the case with the present writer, he could, if required, produce surgical testimony to support it. We have, then, a technique which is beneficial to the general health and of proved efficiency as regards its effects on malignant growth. It would, therefore, appear rational to employ the same procedure as a prophylactic after operation. I have done so for 13 years with what I believe to be excellent results—although, of course, it is much more difficult to furnish proof of benefit under these circumstances.

So much for the use of X rays as adjuncts to surgery. When a case be wholly abandoned to the radiologist he may at times use more drastic measures. The chief thing which the Erlangen School has taught us in this country is that under certain circumstances it is desirable to concentrate X ray dosage into a few days rather than to spread it over weeks. To give a patient an 8 to 10 hour exposure in one day is not, in my opinion, at all desirable. I am glad to see that you, Sir, in your editorial comments, say that the divided dose is preferable owing to lessening of the strain on the patient.

[1] THE LANCET, March 29th, p. 649.

In the case of people who live at a distance, it is often very convenient for them to get their treatment over in a few days. But there are disadvantages. If the result appears to the patient very good—as in breast and pelvic cases it often does—she may delay her return until a recurrence develops, perhaps a year later. The question arises whether we ought not to provide some intermediate treatment directed to the maintaining of the general resistance, and, incidentally, securing that the patient is kept under observation. Fresh air, suitable diet, and possibly synthetic sunlight, may prove as valuable here as in tubercle.

I am, Sir, yours faithfully,

Harley-street, W., March 30th. F. HERNAMAN-JOHNSON.

CERTIFICATES OF INSANITY.

To the Editor of THE LANCET.

SIR,—From Dr. Ian D. Suttie's letter published in your issue of March 29th it is evident that he has misconstrued my letter in your previous issue. I asked whether medical superintendents of mental hospitals generally did not treat medical certificates as "confidential documents," and whether the general practitioner who made these certificates did not expect them to be treated as such. In other words, are they not of the nature of confidential statements furnished by one doctor to another? Dr. Suttie has implied that I advocate this on the grounds of shielding the medical man from the resentment of patients whom they have certified, but Dr. Macnamara, on the other hand, who has dealt with this matter in his letter of the same issue, conveys my meaning entirely, which is far removed from what Dr. Suttie suggests.

It may be unknown to some that within seven days of the patient's admission to a mental hospital statements made in the certificate of admission are carefully gone into during the examination of the patient without unnecessarily informing the patient from what source they have been obtained, and I can see no reason why the "perfect frankness" which Dr. Suttie suggests is wanting cannot be exercised in this matter. During my 18 years experience I have failed to meet with that lack of confidence which Dr. Suttie states exists between asylum medical officers and their patients, and I am sure this is no more lacking in mental hospitals than general hospitals, where one constantly meets with "fault-finders" and the discontented.

Another disadvantage that Dr. Suttie claims mental hospital patients suffer from is "lack of insight." This being part and parcel of the patient's mental state leading up to his certification I fail to see what benefit it would be to the patient to see what has been written on these certificates.

I am, Sir, yours faithfully,

Devon Mental Hosp., Exeter, March 31st. RICHARD EAGER.

A CRITICAL EXAMINATION OF PSYCHO-ANALYSIS.

To the Editor of THE LANCET.

SIR,—Dr. A. Wohlgemuth's entry into the sphere of medicine does not bring with it an impression of knowledgeable information. The well-known method of abreaction or the reviving of memories of painful experiences was practically unknown in this country before the war. The therapeutic value has since been demonstrated by a large number of English observers—the names of William Brown, Culpin, Forsyth, Prideaux, Stanford Read, and the late Dr. W. H. Rivers occur to me—and Dr. Wohlgemuth's reference [1] to one twenty-year-old foreign authority for the other side, although "especially emphatic," is not convincing even if the counting of heads has value in deriding controversy. Some of the workers above-named are not psycho-analysts, but they provide a wealth of observation, showing the need for a theory to convey the working of mental processes apart from awareness. I am not assuming that Dr. Wohlgemuth could not have found English authorities to support his contention, for the method of revival met with extraordinary opposition. The loss of memory was denied by some, the possibility of revival was denied by others, and its therapeutic value was attributed to "suggestion." At first sight the reason for this opposition is not clear, but when it is realised that if observations are correct, Freud's theories—even if not fully confirmed by them—must be seriously considered, then the opposition becomes comprehensible. Freud is a heretic, and no observation must be admitted that might strengthen the heresy, even if those who made them are not Freudians. If Dr. Wohlgemuth seeks clinical evidence which cannot be classed as "assertion," I recommend him to read Culpin's "Psychoneuroses of Peace and War" (Camb. Univ. Press). This writer is rather chary of theory except so far as his own observations demand it. I am, Sir, yours faithfully,

Wimpole-street, W., March 28th. ROBERT M. RIGGALL.

[1] THE LANCET, March 29th, 1924, p. 675.

DICHOTOMY.

To the Editor of THE LANCET.

SIR,—I was, to put it mildly, surprised to see a report in the public press of a meeting of a provincial medical society at which the above subject was discussed and a resolution condemning the practice passed. In your issue of March 29th an article deals with the legal aspect of the practice.

The inference the public would naturally draw from these article is that such a practice is prevalent in the profession. Nothing could be conceived more calculated to impair or destroy the confidence of the people in their medical attendants. In my 40 years' work in the profession I never had even dreamed of the possible prevalence of such a state of affairs.

I trust in a future issue of your invaluable paper you may be able to deal with the topic in such a way as may remove all apprehension as to the existence of "dichotomy," in the manner suggested in the reports I have mentioned, from the minds of the public and of Yours faithfully,

Blackpool, March 29th, 1924. LEONARD MOLLOY.

*** No suggestion was made that the practice occurred with any frequency in this country. But the difficulty has been notorious elsewhere, as our special correspondents have pointed out.—ED. L.

DOMINIONS MEDICAL HOSPITALITY COMMITTEE.

To the Editor of THE LANCET.

SIR,—We have been instructed to ask members of the medical profession to assist this committee by offers of personal help. The circumstances of the formation and constitution of the committee have been fully explained in *The Lancet* and in the *British Medical Journal*.[1] The committee includes the President of the Royal College of Physicians, the Vice-President of the Royal College of Surgeons and Vice-Chancellor of London University, the Master of the Society of Apothecaries, the Presidents of all the Medical Societies of London, representatives of the Naval, Military, and Royal Air Forces, and of all the Dominions and Colonies. If any members of the medical profession in or near London are prepared to offer personal hospitality, we should be much obliged if they would inform us. Suggestions will be welcome. We are instructed to say that the committee would be grateful for any kind of hospitality, whether it take the form of accommodation for a short period, or of receptions, dinner parties, and the like.

The hon. secretaries will be glad to coöperate with the hosts in any way that may be of use, and will give any particulars possible. Offers should be addressed to the hon. secretaries, 94, Harley-street, W. 1.

We are, Sir, yours faithfully,

A. E. MORTIMER WOOLF,
E. T. C. MILLIGAN, } Hon. Secretaries.

March 31st, 1924.

[1] The Lancet, March 1st, p. 453, and March 8th, p. 509; and Brit. Med. Jour., March 1st, p. 411, and March 8th, p. 437.

THE TESTIMONIAL TO DR. BRACKENBURY.

To the Editor of THE LANCET.

SIR,—The long and untiring devotion of Dr. H. B. Brackenbury to the interest of the medical profession, culminating in his recent presentation of the case for insurance practitioners before the Court of Inquiry, has given rise to a widespread feeling that the time is opportune for adequate acknowledgment of his unique services. In order to give material expression to this desire a Committee has been formed with the object of collecting a fund which will be applied in a manner to be decided at a later date, after consultation with Dr. Brackenbury.

Insurance practitioners, who more than all others are indebted to Dr. Brackenbury, will be approached through their panel committees, many of which have already taken the matter in hand and have promised contributions. The appeal, however, is a general one, and steps are being taken to bring the fund to the notice of various other professional organisations. No direct request will be made by this Committee to individuals, but the Committee will welcome contributions from any member of the profession who wishes to pay tribute to Dr. Brackenbury's immense labours.

All communications should be addressed to the honorary secretaries of the fund (of which the undersigned form the executive committee), and cheques should be made payable to the honorary treasurer, Mr. H. S. Souttar, at Room 17, 429, Strand, W.C. 2.

We are, Sir, yours faithfully,

H. G. DAIN, Chairman.
N. BISHOP HARMAN, Deputy Chairman.
H. S. SOUTTAR, Hon. Treasurer.
T. RIDLEY BAILEY.
R. J. FARMAN.
E. R. FOTHERGILL.
C. E. DOUGLAS, Hon. Sec. and Treas. (Scotland).
W. E. THOMAS, Hon. Sec. and Treas. (Wales).
HAROLD S. BEADLES,
PETER MACDONALD, Hon. Secretaries.

"BLIND CÆCOSTOMY."

To the Editor of THE LANCET.

SIR,—In a kindly review of the second edition of my book on "Acute Abdominal Diseases," published in your issue of last week, there is almost a complaint that I do not advocate that operation for acute intestinal obstruction to which the name of "blind cæcostomy" has been applied. Now I am not quite sure who is responsible for this title, but it seems to me that surgical practice should not be governed by phrases. Whatever the value of catch-phrases may be in political issues, I think we ought to abjure them in scientific circles. Cæcostomy is certainly a good operation where cæcostomy is indicated, but why apply the adjective "blind"? Such a cæcostomy is an example of blind surgery. We all know what ought to happen if the blind lead the blind, but in this connexion it is the patient who falls into the ditch!

In how many cases of *acute* intestinal obstruction is it possible to know before operation that the obstruction is below the cæcum? In those where an obstructing mass can be palpated in the course of the colon, and this is usually prevented by the distention of the bowel. Secondly, in those cases where rectal examination reveals the cause of the obstruction, and I would submit that the only common indication for cæcostomy in acute obstruction is the discovery of a growth in the rectum. If this be so, it is a scientific procedure and does not merit the name "blind." I freely admit that lives have often been saved by an opening in the small intestine where the actual site of obstruction has not been determined and the surgeon contents himself with draining a distended piece of small bowel, but the same technique does not apply to the cæcum unless it is enormously distended. Furthermore, it must have been the experience of other surgeons besides myself that in a case of growth of the large intestine, as well as in diverticulitis of the pelvic colon, small and large bowel obstruction have been present at the same time, due to the small intestine being kinked, and adherent to the large. In such a case cæcostomy without exploration would indeed be "blind," and this adjective would soon be applicable also to the patient. Catch-phrases make bad surgery.

I am, Sir, yours faithfully,

JOSEPH E. ADAMS.

Harley-street, W., March 31st, 1924.

A CASE OF PRIMARY DISLOCATION DUE TO BOXING.

To the Editor of THE LANCET.

SIR,—A patient recently reported sick, and was found to be suffering from a typical dislocation of the right shoulder. He stated that it took place whilst he was making a forward right stroke, boxing. He is a very muscular man, and the dislocation could not be reduced without an anæsthetic.

The points of interest are: (1) The uncommon cause of the dislocation; (2) the fact that the dislocation was a primary one. As the patient's shoulder-joint was not X rayed before the lesion was reduced, I am not certain whether it was of the subglenoid or the subcoracoid variety.

I would be interested to hear if any of your readers have met with a similar accident under similar circumstances.—I am, Sir, yours faithfully,

Brighton, March 26th, 1924. W. S. CROSTHWAIT.

ITALIAN LABELS ON PROPRIETARY MEDICINES.

To the Editor of THE LANCET.

SIR,—Our attention has been directed to your issue dated Feb. 2nd, on p. 256 of which, under the heading Secret Remedies, Formulas Disclosed by the Makers, you include what purports to be the formula of Guy's tonic. In the introductory paragraph it is suggested that this formula has appeared upon bottles of Guy's tonic sold in Italy, and that although the formula may not be the right one, the composition as stated is that disclosed by the makers themselves.

We desire to advise you that the exact composition of Guy's tonic has not been disclosed by ourselves to anybody, nor have we directly exported goods to the country mentioned. We understand that it is the custom of some distributing firms who import proprietary medicines into Italy to evolve a formula for the sole purpose of getting the goods through the customs. Consequently, these formulas may often bear very little relation to the actual ingredients. If this has been done in respect of Guy's tonic, you will agree that, as proprietors, we are not responsible, and in so far as your paragraph suggests that the formula you publish is that given by ourselves, or even authorised by us, it is contrary to fact and does not confirm or otherwise the alleged composition of Guy's tonic as published in Secret Remedies.

We are, Sir, yours faithfully,

March 20th, 1924. GUY'S TONIC, LIMITED.

PRESENTATION TO DR. F. W. COLLINSON.—Following a dinner at the Bull and Royal Hotel, Preston, on March 25th, Dr. F. W. Collinson was presented with his portrait in oils, painted by Mr. W. W. Russell, A.R.A., and an illuminated address on behalf of 80 medical men of Preston and district. The address, beautifully bound in dark-blue morocco, was inscribed on vellum, with a replica of the portrait on the title page. Below the portrait was the following inscription:—Frederick William Collinson, M.D. Edin., M.R.C.P. Lond., F.R.C.S. Edin., senior house surgeon 1887–1889; honorary surgeon 1889–1923; hon. consulting surgeon, 1923; hon. secretary medical board 1901–1924; hon. librarian Brackenbury Library, 1894–1924; vice-president Preston Royal Infirmary, 1923. The presentation marked the retirement of Dr. Collinson as senior surgeon from the medical staff of the Preston Royal Infirmary.

Obituary.

HETTY ETHELBERTA CLAREMONT, M.S. LOND., F.R.C.S. ENG.

WE deeply regret to record the death on March 27th of Miss Ethelberta Claremont, from broncho-pneumonia complicating typhoid fever. Born in 1892, she was the daughter of Mr. A. W. Claremont, J.P., and granddaughter of Claude Clarke Claremont, M.R.C.S. Eng., sometime public vaccinator for St. Pancras;

ETHELBERTA CLAREMONT.

and she belonged to a family that has given a number of medical men to the profession. Educated privately and at King Alfred School under Mr. John Russell, Miss Claremont began her medical studies at the London (R.F.H.) School of Medicine for Women and proceeded later to St. George's Hospital, where she was awarded the John Hunter gold medal. After a brilliant career as a student she took the Conjoint Diploma of the Royal Colleges in 1916, and the M.B., B.S. Lond. in the following year. At St. George's Hospital she held numerous appointments, including those of house surgeon, house physician, surgical registrar, resident anæsthetist, assistant curator of the museum, casualty officer, and assistant in the V.D. department. In 1920 she became a Fellow of the Royal College of Surgeons and then spent a year as voluntary resident assistant surgeon at the Zurich University Clinic, also visiting clinics at Vienna, Budapesth, Frankfurt, and Madrid. On her return to England she became surgical registrar to the London Temperance Hospital and was appointed surgeon to the Bermondsey Medical Mission Hospital, and she held the post of clinical assistant at the out-patient department of the South London Hospital for Women, and for a time at the female Lock Hospital. In 1922 she became a Master of Surgery in the University of London.

As a surgeon Miss Claremont showed outstanding abilities and perseverance. Her skill as a diagnostician was great, but even more remarkable was her discernment of human nature. She was deeply concerned with the welfare of her patients, in whom she took a lasting interest. At the time of her sudden illness she was developing some original research work which will now be lost to medicine. Miss Claremont had more than average linguistic ability. She was athletic, possessing an exceptional physique and some experience of mountain climbing. She could walk 20 miles in a day. Her hobbies included carpentry, gardening, and music. The freshness and charm which attracted people to her were the visible signs of an inward healthiness of body and mind.

To Miss Claremont's qualities of heart and head we have received a number of personal testimonies. Dr. Mary Scharlieb, after describing her record of professional work as one of which any young graduate might be justly proud, adds: "It shows how wide was her range of knowledge and how well she had succeeded in impressing her personality and her abilities on those who were best qualified to judge of them, her own immediate superiors and teachers. We all acknowledge the loss sustained by the medical profession in the premature and tragic death of this gifted and very charming young woman. I knew Dr. Ethelberta Claremont well from the time that she was a little girl, and always found her to be straightforward, honourable and unselfish."

Sir Humphry Rolleston writes: "The premature end of a promising career before there has been time to see its outcome is always distressing, and in the case of such a keen intellect and attractive personality as that of Miss Claremont is indeed deplorable. Coming to St. George's Hospital during the war, she held a number of resident appointments and then served as surgical registrar and assistant curator of the museum; I saw much of her work in the last post and came to respect her ideals and practical efficiency. With the highest surgical qualifications she had in her short professional life since then worked hard in several other hospitals, but the reward that honest devotion should have secured has been denied her and the profession has been robbed of a brilliant and promising member by the ruthless hand of death."

Miss Claremont had been recently a frequent and valued contributor to our editorial columns, and we join with her other friends and admirers in offering tribute of sympathy to her parents and family.

THE LATE SIR WILLIAM MACEWEN.

WE have received from a friend of the late Sir William Macewen, who also attended him in his last illness, the following appreciation:—

"On one of these recent days the writer stood, alone in the room, by the bedside of Sir William Macewen, when he lay, high on his pillows, enjoying a brief respite of peace and comfort from suffering. Quite suddenly and spontaneously, in his ordinary quiet and deliberate voice, he began to speak of Mr. Lister. That surgeon had brought into his class one day a book from which he read to his students extracts from a paper by Pasteur, in which the French chemist explained his view that putrefaction was due to the operation of living organisms. Mr. Lister had consulted an eminent chemist of the day as to chemical means by which such organisms might be destroyed on living tissues, and the answer he had received was that he could be supplied with a long list of such substances, but what their effect might be on the tissues it was for the surgeon to determine, but the chemist had added 'try carbolic acid.' These were days scarcely to be imagined or conceived by the surgical student of the present day,

and death following amputation after amputation in melancholy and almost invariable sequence was disheartening to the last degree.

"William Macewen, a junior student of surgery in the Royal Infirmary at that time, was a witness to these events and a listener to these suggestions, and one morning, more than usually depressed by these events, he came out of the infirmary, and sat down on a bench to consider by himself whether he could continue to pursue a study which could show only such results, and whether he should not abandon the study of medicine. An elderly woman of the domestic staff passed him as he sat in gloomy contemplation, and, struck by his aspect, stopped in front of him and said, 'What's makin' ye sae sad the day, laddie?' To which he answered with a wave of the hand towards the hospital, 'Who could help being sad at these things.' To which the woman replied that it would be to more purpose to go back and try to mend them. The student went back, went back to a recent amputation, looked at the ligatures which projected in long ends from the wound. They looked dirty; he then had a look at the unused ligatures, which were made of hemp and kept in a jar, and they did not seem clean. He then asked and obtained permission to try if boiling would improve them, and from the ligatures he passed to the needles, and, without further request, passed to the instruments, with increasingly appreciable results; but he could not so secure the cleanness of the hands of the attendant who handled them all.

"The little monologue, of which the above is but the substance, was spoken in a clear quiet voice, without halt for fitting words, without delay of memory, as if the times, and occasions, and incidents stood out clearly in the speaker's mind as but things of yesterday, but the tale was unfolded with, for that speaker, a most unusual quiver of the mouth and moisture of the eyes. It was as if the speaker's mind travelled back down the long trail which he had followed, and saw, far down amid darkness and cloud of ignorance and noisome pestilence, the very spot and moment from which he had consciously and deliberately set forth on a determined road—the bitter, narrow path of commencement, full of hindrances and obstacles, the toilsome slow ascent, until at last he lay at rest upon the shining peak—content. There was no exultation in the quiet voice, no self-glorification in the calm narration, only a fullness of content at the assurance that the task he had, more than half a century before, set himself to do had been accomplished.

"This was the key to Sir William Macewen's character, the 'secret' of his life. He deliberately set before himself a definite purpose, not the quest of glory nor the amassing of riches, but the exposing of the causes of a type of disease that was a scourge to humanity and a scandal to surgery and their destruction. To this end everything was subordinated. For the causes were a mystery; they were as impalpable and invisible as they were malignant and apparently omnipresent. He began the task from the beginning; there was no science of bacteriology then, no charts of the region he set out to explore, no guide in the darkness he set out to illuminate. He had to devise his own methods, to forge his own instruments. He worked alone. He must have been gifted with remarkable powers of observation, a clear faculty of memory, and a firm will. But even gifts atrophy if unused, but his he developed to a high degree as implements for his purpose.

"Thus mere opinions and arguments founded on opinions left him cold. He wanted facts, and because a misinterpreted observation might easily lead widely astray, he wanted to observe the alleged fact for himself, and if it had any bearing on his pursuit to work out his own conclusions. Thus the very circumstances of the time and the nature of the pursuit led inevitably to a discarding of traditional views, to a mistrust of ordinarily accepted methods, and to a minute attention to detail in the devising of new ones. In his progress his mind advanced deliberately from one tested position to another; he refused to take mental leaps. As success attended his endeavour, and the prospect widened, the implications of his work went far beyond the goal for which at first he set out.

"The surgical student of to-day enters upon such a heritage of established fact, of clear principle, of proved method that it is scarcely possible for him to realise the ignorance and darkness out of which these have been evolved and the labour involved in the process. The search for the cause of surgical disaster, on the assumption that the cause is living, infinitely small and ubiquitous, inevitably laid under suspicion everything and every person in, on, and around, and the elimination of every possible source from which the cause could issue seemed almost an unattainable ideal, yet this was the ideal which the, as yet, unqualified junior student of surgery seemed already to conceive. But what a deep distrust of men and of things does this engender! What caution in the choice of human instruments no less than of material means! What testing of them all when chosen! If the full development and practically automatic observance of the aseptic technique have swept away these clouds of suspicion and mistrust with the ignorance and pestilence out of which they were begotten, they yet left their indelible stamp upon the man who, to accomplish their destruction, had submitted himself to their ordeal.

"Macewen's independence of judgment, keenness of observation, meticulous attention to detail, tenacity of purpose, caution in reaching conclusions, reliance on self were some of the weapons he took to himself for the warfare in which he engaged and to which he gave his life; they were the habiliments of his mind, the vestments of his spirit. Similar qualities characterised his friendship. He did not 'wear his heart on his sleeve for daws to peck at.' He was slow to give his friendship, for with it he gave his confidence, and here, too, mistrust had first to be dispelled, or, rather, fitness for trust had first to be established. His hospitality exhibited some of the same high quality. The discerning guest at his table could not fail to savour the harmony that pervaded the meal, and the fitness without ostentation of its service.

"Sir William Macewen would have made a poor politician; he would never compromise, though in less democratic days he might have made a rare statesman. In commerce he would have been a failure; he never bought in a cheap market, he gave always of his best, and often did not know whether he had received payment. Work was his religion; and the religion of his work was, 'Whatsoever thy hand findeth to do, do it with thy might.'"

SUSSEX PROVIDENT SCHEME.—This scheme for hospital benefits and additional medical services, to which persons are entitled by paying small sums in advance, made great strides during 1923. Fifty-six new groups were formed, and there was an increase in the number of subscribers to the extent of 2761, with a corresponding increase in the number of dependents of 4393, making in all a total increase of 7154 people entitled to the benefits. At the end of 1922 there were no groups outside Brighton and Hove, but at the end of 1923 there were 17; this number had been doubled since the advent of the current year, largely owing to the efforts of Major G. H. M. Fowler, who had been appointed by the Royal Sussex County Hospital as county appeal organiser and lecturer. The report presented at the annual meeting on March 19th showed that during 1923, 312 people received in-patient treatment for a period of 6520 days at a cost of £2786 3*s.* 11*d.*, and that 1037 people had made 5542 attendances for the various forms of specialised medical treatment at a cost of £448 15*s.* 6*d.*, making a total of £3234 19*s.* 5*d.* paid to the hospitals. The balance-sheet showed a small balance in hand proving, it was declared, that 12*s.* a year was the minimum subscription which could provide hospital treatment. Dr. Gordon Dill, the founder of the scheme, expressed the view that having successfully weathered three most expensive years, so far as hospital treatment was concerned, a larger balance would be shown at the end of the current year, by reason of the decrease in the hospital costs, notably in the case of the Royal Sussex County Hospital.

Medical News.

UNIVERSITY OF LONDON.—At a meeting of the Senate held on March 20th, the Vice-Chancellor being in the chair, Mr. H. J. Waring was appointed to represent the University at the Imperial Social Hygiene Congress to be held at the British Empire Exhibition in May, 1924.

Lectures on Mental Deficiency.—A course of lectures on mental deficiency, supplemented by a course of clinical instruction, has been arranged by the University Extension Board in coöperation with the Central Association for Mental Welfare, to be held from May 19th to 24th. It is intended for qualified medical practitioners, and more especially for those who are engaged as certifying officers to local authorities under the Mental Deficiency Act, 1913, as school medical officers, or as medical officers of institutions, or who are otherwise definitely concerned with defectives. The course will be based on the requirements of the syllabus for the University of London diploma in Psychological Medicine. The University will grant a certificate of attendance to those who have attended the whole course regularly, taking both theoretical and practical work. Lectures will be delivered by Drs. A. F. Tredgold, F. C. Shrubsall, Cyril Burt, D.Sc., and Norwood East, and the clinical work will consist of visits to L.C.C. and other special schools for mental deficients. Registration fee, 10*s.* 6*d.*; fee for the course, £2 12*s.* 6*d.* All communications with reference to the course should be addressed to Miss Evelyn Fox, c/o University Extension Department, University of London, Imperial Institute-road, South Kensington, S.W. 7.

UNIVERSITY OF MANCHESTER.—At recent examinations the following candidates were successful:—

DIPLOMA IN PUBLIC HEALTH.

Beatrice L. Ellison, W. D. Hood, J. G. McKinlay, and Margaret Pownall.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

Part I.—L. C. F. Chevens, H. D. Cormac, T. W. Davidson W. J. Lynch, W. R. McGlashan, and C. B. V. Walker.

QUEEN'S UNIVERSITY OF BELFAST.—At examinations held recently the following degrees and diplomas were obtained:—

DOCTOR OF MEDICINE (M.D.).

*John A. Smyth, †John H. Dunn, William E. Crawford, Eric A. Davison, John S. Dudgeon, and Samuel A. Powell.

BACHELOR OF MEDICINE, BACHELOR OF SURGERY, AND BACHELOR OF OBSTETRICS (M.B., B.Ch., B.A.O.).

First-class Honours.—Thomas J. Gibson.
Second-class Honours.—Wallace Linton and Matilda Matson.
Pass.—Isobel Alexander, Thomas V. Aronstam, James G. Bell, John E. Boyd, John L. Bradley, Margaret T. Clearkin, Thomas Craig, John S. Erwin, Elizabeth Fulton, John A. Gill, William D. Hamilton, William K. Hay, Elizabeth G. Henderson, James P. Henderson, David Kinley, Isabel Lindsay, Gerard B. McCloskey, Samuel McCormack, Helen F. McCrea, Violet McFeeter, William G. McKinney, Catherine McNeill, Jane A. D. Maclean, Edward Magee, John S. Malseed, Flora Richards, Gibson G. Smith, James Smith, John Stuart, Dorothy Watson, and Eleanor I. Wheeler.

DIPLOMA IN PUBLIC HEALTH (D.P.H.).

Kenneth Cowan, George A. Dawson, Margaret R. Hanna, John J. Murray, John W. Orr, Mary E. Patterson, John Scott, and Jeanie Wilson.

DIPLOMA IN DENTISTRY (L.D.S.).

William A. McClelland.

* With Gold Medal. † With commendation.

UNIVERSITY OF ABERDEEN.—At examinations held recently the following candidates satisfied the examiners:—

DEGREE OF BACHELOR OF MEDICINE (M.B.) AND BACHELOR OF SURGERY (CH.B.).

With First-class Honours.—*Andrew M. Duthie.
With Second-class Honours.—Arthur M. Barron, †Charles Burnett, †William Greenlaw, †William Gunn, David P. Levack, Thomas D. Marr, †Mary S. Sutherland, †Gavin C. Taylor, †Charles W. Walker, and †William W. Walker.
Ordinary Degree.—Alexander Aberdein, William Adams, John H. Bell, Jeannie Benzie, Frederick J. T. Bowie, John Boyd, James Carrie, Laura D. Catto, William G. Cheyne, George S. Christie, William S. G. Christie, Thomas Clunie, Henry Clyne, James Cooper, William S. Coutts, James W. Craig, Charles L. C. Crowe, James Davidson, Sydney G. Davidson, Alexander W. Dockar, James K. Donald, Alexander Donaldson, Arthur W. M. Douglas, John W. Duncan, John F. Durno, Effie M. Duthie, Walter L. Esson, Leonard H. Eunson, Donald Farquharson, Rhoda G. Findlay, Nelly Flett, Alexander M. Fraser, Robert G. Fraser, Eric G. A. W. Fulton, John A. Gaiter, Edwin Garden, Robert U. Gillan, Daniel G. J. Gordon, James Gordon, James Grant, John K. Grant, Alexander P. Gray, John S. Harper, James W. Hay, James Henderson, Allan C. Hendry, Edward Hutcheon, James Innes, William J. Jack, William J. Leach, Mary R. Levack, John M. MacFarquhar, William H. J. McGillivray, Alexander H. Mackay, George W. M. Mackay, Harry A. Mackay, George D. Mackenzie, James McKenzie, Neil O. Mackinnon, John W. McKinty, Leslie G. McLean, †Duncan McLellan, Donald McLennan, Angus Macphail, Redvers G. Melvin, Betty Mitchell, George R. Morgan, †Alexander M. Morrice, †Alexander G. Mowat, James J. Munro, James W. Murdoch, William Niven, James H. S. Peterkin, William R. Pratt, Alexander F. Pringle, Francois P. S. Retief, Alexander Roy, Christina Russell, Robert A. Simpson, David Skinner, Gordon J. Smith, Gladys A. Spark, Robert J. Stephen, James G. Stewart, William Sutherland, George Swapp, Margaret A. C. Symon, Robert M. Thompson, Alfred Torrie, William Tweddell, James A. Whyte, Charles D. Wilson, and Maxwell C. Wright.

DIPLOMA IN PUBLIC HEALTH (D.P.H.).

Helena M. Davidson, Marjorie I. Outram, and Gladys N. Watson.

* Completed Final Medical Professional Examination with much distinction.
† Completed Final Medical Professional Examination with distinction.

SCHOOL OF PHYSIC, TRINITY COLLEGE, DUBLIN.—At examinations held recently the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

Part I.

Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology.—C. R. Boland (high marks), N. Shapira (high marks), W. G. S. Maxwell, F. H. M'Kenna, H. Waters, E. S. A. Crawford, C. E. M'Causland, H. Tomkin, and M. Sherowitz.

Part II.

Medicine (M.B.).—L. E. J. Werner (high marks), R. Schaffer (high marks), C. J. M'Quillan, G. Robinson, W. R. Aykroyd, M. A. Gerrard, H. J. Hugo, M. D. Fox and Evaline E. Mooney (equal), W. J. Janse van Rensburg, L. C. Brough, R. R. D. Crawford, Lucy M. Joly, R. L. G. Proctor, W. A. Hopkins, K. F. Mackenzie, Eileen Brangan, Anne D. Dockrell, I. J. Isaacson, P. P. van der Merwe, S. Wigoder and G. A. Cowan (equal), W. A. Redmond, D. K. Lyons, E. C. Downer and J. J. Laing (equal), C. R. Hillis, Dorothy J. Booth, J. L. F. Steele and C. J. N. Loubser (equal), J. Morris, and A. L. Dobbyn and O. G. Wilde (equal).
Surgery (B.Ch.).—W. A. Taylor (high marks), L. E. J. Werner (high marks), F. C. B. L. B. Crawford, Lucy M. Joly, L. M. Bell, A. Hawthorne, Anne D. Dockrell, Norah M. Gilcriest, E. Harvey, R. E. Fausset and I. J. Isaacson (equal), Evaline E. Mooney, H. O'D. Burke-Gaffney and Bertha H. Lawler (equal), W. R. Aykroyd and C. J. N. Loubser (equal), R. Warnock, and S. W. Jamison.
Midwifery (B.A.O.).—T. W. May (high marks), D. L. Hemmingway (high marks), P. K. Dixon, M. Sless and W. D. Speedy (equal), Isidore Rosin, W. H. Coen, A. J. Mooney, J. Cussen, S. M'Dermott, S. E. Magowan and Isobel G. Smith (equal), F. M. Purcell, W. H. Maguire, J. Crawford, M. D. Fox, J. M. Johnston, J. L. Levingston, G. G. M'Farland, J. G. Maguire and A. B. Monks (equal), Agnes L. Kelly and C. Lord-Flood (equal), M. J. Bradlaw, C. R. Moore, A. J. Head, W. J. van Zijl, and C. Wilson.

DIPLOMA IN PUBLIC HEALTH.

Part I.

Chemistry, Bacteriology, Physics, and Meteorology.—G. Bewley, N. M'I. Falkiner, B. W. D. Fayle, A. Darlington, A. E. Campbell, Ruth Lemon, G. Blackall, W. L. Duncan, R. H. Micks, R. S. M'Elroy, and Iris P. Nelis.

Part II.

Sanitary Engineering; Practical Sanitary Report; Hygiene and Epidemiology; Vital Statistics and Public Health Law.—A. Darlington, W. L. Duncan, and G. Backall.

FINAL DENTAL EXAMINATION (B.DENT.SC.).

J. F. F. Liddy.

DENTAL APPOINTMENTS IN THE NAVY.—The following candidates were successful in the competitive examination recently held in London for appointment as dental officers in His Majesty's Royal Navy (their names have been placed in the order of merit shown at the examination):—

O. J. Barrable, L.D.S., Royal Dental Hosp., London; E. R. Longhurst, L.D.S., London Hosp. Dental School; H. N. V. Barnes, L.D.S., Univ. of Bristol Dental School; D. H. le Marchant, L.D.S., Univ. of Manchester Dental School; and D. L. Simpson, L.D.S., National Dental Hosp. of London.

MINISTRY OF HEALTH AND THE BRITISH EMPIRE EXHIBITION.—The Ministry has prepared a number of exhibits which should prove extremely interesting and instructive to local authorities and their officers. These exhibits, consisting of photographs, plans, models, and the like, will be found in the Government Pavilion and in an annexe, and will be arranged under the following heads: Housing, Town Planning, Disease Prevention, Maternity and Child Welfare, Water Supply, Sewerage and Sewage Disposal, Public Cleansing, Smoke Prevention, and the Welfare of the Blind.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An extraordinary Comitia of the College was held on March 26th, Sir Humphry Rolleston, the President, being in the chair. The President announced that he had appointed Dr. S. Monckton Copeman as delegate at the Congress to be held by the Royal Sanitary Institute in July next. Regarding certain proposals made to the College by Sir Howard Frank for the transfer of the present site of the College to the Canadian Government, it was resolved "that the College regrets that it is unable to accede to the proposals made by Sir Howard Frank." The question of sending a representative to the General Council of the Fellowship of Medicine was discussed, and on the recommendation of the Censors' Board it was resolved to ask Lord Dawson to act in this capacity.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—During the second week of the fortnight's intensive course at the London Temperance Hospital, which begins on Monday, April 7th, apart from the practical demonstrations, ward rounds, and out-patient clinics, there will be a daily lecture at 4.30 P.M., open to the medical profession. These lectures are: The Diagnosis of the Acute Abdomen, by Mr. V. Z. Cope; On Ophthalmology for General Practitioners, by Mr. Ernest Clarke; Varieties of Dyspepsia and their Differential Diagnosis, by Dr. Soltau Fenwick; Gastro-enterology, by Dr. David Somerville; and the Diagnosis and Treatment of Rectal Cancer, by Mr. W. E. Miles. As part of the course there will be a demonstration on fevers by Dr. Goodall, at the North-Western Fever Hospital, one on Mental Diseases, by Dr. Porter Phillips at the Bethlem Royal Hospital, and an ophthalmological demonstration at the Royal Westminster Ophthalmic Hospital. The fee for the week's course is £2 2s. During the week there will be continued the course in ophthalmology at the Royal Westminster Ophthalmic Hospital, consisting of clinical instruction every afternoon from 2 P.M., and special demonstrations in medical ophthalmology and methods of examination on Tuesdays and Thursdays.

The following courses will be held in May: A two weeks' intensive course at the Prince of Wales's General Hospital, Tottenham, May 19th to 31st; special courses in diseases of children at the Infants Hospital, May 12th to 24th; diseases of the ear, nose, and throat at the Central London Throat, Nose, and Ear Hospital, May 12th to 30th; proctology at St. Mark's Hospital, May 5th to 17th; psychological medicine at Maudsley Hospital, May 5th to 30th; and venereal disease at the London Lock Hospital, May 5th to 31st. Copies of each syllabus, with full particulars of the above courses, can be obtained on application to the Secretary to the Fellowship of Medicine at No. 1, Wimpole-street, W. 1.

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held on April 11th and 12th in the Council Chamber, town-hall, Newport (Mon.), Dr. Charles Porter presiding. On April 11th, at 2.30 P.M., visits will be paid to the X ray and out-patients' departments of the Royal Gwent Hospital and to the Newport Alexandra Docks. At 4 P.M., at the town-hall, an exhibition of work done by members of the local maternity and child welfare centres will be shown. At 5.15 P.M. discussions will be held on Some Aspects of Child Welfare Work, to be opened by Dr. Minna A. Benner, and on the Increase in the Use of Boric Acid in the Sophistication of Foods, to be opened by Dr. J. Howard Jones. Dr. Ralph M. F. Picken, Dr. J. S. Peebles, Dr. Herbert Jones, and Mr. George Hogan will take part. On April 12th, at 10.30 A.M., visits will be paid to the new works of the Whitehead Iron and Steel Co., Ltd., and to the Newport Gasworks, and special educational films will be shown. At 12 noon, at the town-hall, discussions will be held on Food Hygiene, opened by Mr. Spencer E. Jones, and on Pure Milk, opened by Mr. W. E. Thorn.

Congress of the Royal Sanitary Institute at Bordeaux.—The 1924 Congress of the Royal Sanitary Institute, to be held at Bordeaux under the patronage of the President of the French Republic and the presidency of Viscount Burnham, will be opened on June 4th. The sections of the Congress will be as follows: (1) State Medicine and Municipal Hygiene: Presidents, Sir Humphry Rolleston, Prof. C. Achard; hon. secretaries, Dr. W. Hanna, Dr. J. M. Clements, Dr. R. Pierret. (2) Naval, Military, and Air: Presidents, Surgeon Vice-Admiral Joseph Chambers, Médecin Inspecteur Général Vincent, Dr. Girard; hon. secretaries, Surg.-Comdr. S. Bradbury, Squadron-Leader J. H. Peck, Médecin Major J. Petit, Dr. G. Larrazet. (3) Industrial Hygiene: Presidents, Sir Thomas Oliver, Prof. W. Dubreuilh; hon. secretaries, Dr. G. Hurrell, Dr. C. S. Thompson, Mr. M. D. Wallace. (4) Tropical Diseases: Presidents, Sir Ronald Ross, Prof. A. Calmette; hon. secretaries, Dr. J. G. Thomson, Dr. D. Thomson, Dr. L. Dax. (5) Pathology, Bacteriology, and Biochemistry: Presidents, Sir John Bland-Sutton, Prof. G. Mouriquand; hon. secretaries, Dr. F. Goodwin Rawlinsons, Dr. Arthur Compton, Mr. R. Keith Cannan, Dr. Jeanneney. (6) Women and Public Health: Presidents, H.E. the Marchioness of Crewe, Lady Bland-Sutton (deputy), Mme. Wallerstein; hon. secretaries, Mrs. Alfred Webb-Johnson, Dr. Violet Kelynack, Mme. J. Forsans. The hon. secretaries of the Congress are Prof. E. W. Hope, Prof. R. Cruchet, Dr. T. N. Kelynack, and Mr. E. G. Faure. The central office for registration, information, &c., will be in the Faculty of Medicine of the University of Bordeaux, Place de la Victoire. The London offices of the Congress are at 37, Russell-square, W.C. 1. Specially reduced railway fares (return tickets) have been arranged for members attending the Congress by all routes to Paris and Bordeaux, available from May 31st on presentation of certificate from the Secretary. Membership fee, £1 1s.

HUNTERIAN SOCIETY.—The annual general meeting will be held on April 7th, at 5.30 P.M., at 91, Harley-street, London, W.

HARVEIAN SOCIETY OF LONDON.—An ordinary meeting will be held in the Paddington Town Hall on April 10th, at 8.30 P.M., when Sir William Willcox will open a discussion on Insulin.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting will be held at the Miller General Hospital, Greenwich, on April 11th, at 8.45 P.M., when Mr. Percival P. Cole will deliver an address entitled the Surgery of the Face and Jaws.

A Chadwick public lecture will be given at the house of the Royal Society of Medicine, 1, Wimpole-street, London, W. 1, by Dr. Charles Porter, on American Public Health from an English Point of View, on April 8th, at 5.15 P.M.

DIPLOMA IN PUBLIC HEALTH: INSTRUCTION IN HOSPITAL ADMINISTRATION.—A three months' course of lectures and demonstrations in hospital administration will be given at the North-Western Hospital, Lawn-road, Hampstead, N.W., by Dr. E. W. Goodall, medical superintendent, on Mondays and Thursdays at 4.30 P.M., and alternate Saturday at 10.30 A.M., beginning on April 3rd.

A MEETING of Fellows of the Royal Society of Medicine, Sir William Hale-White presiding, will be held at 1, Wimpole-street, London, W., on April 10th, at 5 P.M., to meet the foreign medical officers of health now in this country, and to hear a lecture communicated by Dr. L. Rajchman, Director of the Health Section of the League of Nations, on the Health Organisation of the League. A preliminary address will be given by Mr. John Wheatley, Minister of Health.

FOREIGN DECORATIONS.—The King has granted permission to wear the Order of El Nahad which has been conferred by the King of the Hedjaz in recognition of valuable services rendered: Dr. W. Dunlop, director of the Royal Hospital, Baghdad; Mr. G. N. Braham, surgeon, Royal Hospital, Baghdad; and Dr. H. C. Sinderson, railway medical officer, Baghdad (Third Class); and Dr. E. A. Mills, chief pathologist, Baghdad (Fourth Class).

LIVERPOOL CHILD WELFARE ASSOCIATION.—The annual meeting was held on March 24th, when the Minister of Health, Mr. John Wheatley, addressed a large gathering in the town-hall. After paying a well-merited tribute to the fame of Miss Beavan, the chairman of the Association, Mr. Wheatley spoke of the spread of education in health matters as being the most valuable part of the work being done. He was delighted to find that the trend of their activities was more and more in the direction of prevention, and in that connexion stressed the immense importance of proper housing. The ideal, he said, was that the whole nation should be one vast child welfare association, showing the same capacity for idealism and sacrifice as the organisation under Miss Beavan's control.

DONATIONS AND BEQUESTS.—By the will of the late Mr. William Hirst Shaw, of Bradford, the testator left, among other bequests, £500 to the Bradford Royal Infirmary and £200 to the Bradford Children's Hospital.—The late Mr. Sydney Wynn Graystone, J.P., of Knightsbridge, left on the decease of his wife and brother large bequests to Downing College, Cambridge, for scholarships and other purposes. He also left £100 to Addenbrooke's Hospital.—Under the will of the late Miss Louisa Rogers, of Shrewsbury, the testator left, among other bequests, £1000 to the Royal Salop Infirmary; £500 to the Eye, Ear, and Throat Hospital, Shrewsbury; £250 to the Shrewsbury Dispensary; and £250 to St. Dunstan's Hostel.—The Chelsea Hospital for Women has received for its new nurses' home £200 from Lord Glendyne in connexion with the fund being raised at the Mansion House.

ASHFORD COTTAGE HOSPITAL.—The fifty-fourth annual report of this institution states that 689 patients were admitted during the year 1923, and 424 operations were performed. These figures show an increase over the previous year, when 613 patients were admitted and 391 operations performed. The daily cost per bed has increased also from 6*s.* 3½*d.* to 6*s.* 8½*d.* The new apparatus installed in the X ray department in February, 1923, at a cost of £315, has been entirely satisfactory; the work done in this department was nearly double that done in 1922. The number of cases submitted for examination is 264, and 17 underwent treatment. The numbers in 1922 were 162 for examination and 9 for treatment. Mr. Ernest Colville, senior surgeon of the hospital, has been presented by the chairman, on behalf of the committee, with a gold wrist-watch on his retirement from the hospital staff after 38 years' service. It was stated that it would shortly be necessary to increase the capacity of the hospital. Plans had been prepared for double the number of beds now existing, and the cost of the completed work would be from £10,000 to £12,000; but the plans had been laid out in two or three sections. An anonymous offer of £1200 having been received, it was decided to proceed with the first section forthwith, and to build a new ward for six beds, with service kitchen, bathroom and lavatories, a nurses' sitting-room, new kitchens, scullery and larder, a storage room, and a new mortuary. The total cost of these additions would be about £3600.

LIVERPOOL MEDICAL INSTITUTION.—A pathological meeting was held on March 20th, Mr. R. Craig Dun, the senior vice-president, being in the chair. After the exhibition of specimens, which included a unique series of experimental lesions in animals which at least closely resembled those of foot-and-mouth disease, a short discussion took place. Prof. J. M. Beattie gave a brief account of the experimental work done with material obtained from supposed healthy contacts of cases of foot-and-mouth disease and alluded to the almost insuperable difficulties which had been put in his way. In reference to a specimen of epithelioma of the vulva removed with the glands in the groin en bloc by Mr. St. G. Wilson, Prof. Blair Bell spoke of his experience of this operation which had given him uniform success during the last 15 years. Dr. Henry Cohen read a paper on Observations on the Cerebro-spinal Fluid. He reviewed the work of Dandy, Weed, and others on the formation, circulation, and absorption of cerebro-spinal fluid, and gave a brief account of his own work on this subject.

The Relation of Leprosy to Tuberculosis.—A special meeting of medical men of the Liverpool district was held under the auspices of the Liverpool Medical Institution on March 19th, to hear an address by Sir Leonard Rogers on the Problems of Leprosy Research and Their Relation to Tuberculosis. The speaker began by attempting to estimate the number of lepers in the world, assigning at least 500,000 to the British Empire. The size of the problem thus indicated, he proceeded to suggest possible factors in the ætiology of leprosy. Most stress was laid on close contact, especially in warm, moist climates. Sir Leonard Rogers showed maps and statistics with reference to the question of contagion. Although none could claim a high degree of contagiousness for this disease, it was clear that where it did occur it was the result of close contact with actual sufferers. Sir Leonard Rogers proceeded to discuss preventive methods, and described the segregation treatment of the Middle Ages and its effectiveness. The difficulty, he pointed out, was in finding and isolating the early cases, who in Norway, it was estimated, were infective for three years on an average before isolation was carried out. In this connexion the increased susceptibility of young persons was stressed. Modern methods included the abolition of prison-like buildings, the provision of useful work whereby lepers could be made self-supporting, and, above all, improved methods of treatment. He spoke of his attempts to deal with tuberculosis on analogous lines owing to the morphological similarity of the bacillus, and of how this had led him to the introduction of sodium morrhuate in leprosy. This substance, along with ethyl morrhuate, was proving effective in treatment and was much simpler to administer. In conclusion, a series of lantern slides was shown demonstrating the striking results of treatment.

THE LANCET: SUBSCRIPTION RATES.

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Parliamentary Intelligence.

HOUSE OF COMMONS.

TUESDAY, MARCH 25TH.

Payments to Insurance Practitioners.

Mr. FREDERICK GOULD asked the Minister of Health what was the amount of capitation fee now to be paid to panel doctors per panel person; what was the increase, if any, agreed upon; and from what fund would this money be drawn.—Mr. WHEATLEY replied: Payments to insurance practitioners for the current year in respect of medical treatment given to insured persons will be based upon a capitation fee at the rate of 9*s.* per annum in respect of each person entitled to medical benefit. The corresponding capitation fee for the years 1922 and 1923 was 9*s.* 6*d.*

WEDNESDAY, MARCH 26TH.

Patients in Venereal Disease Clinics.

Mr. SOMERVILLE HASTINGS asked the Minister of Health the percentage of patients treated in the venereal disease clinics during the last year under the age of 18 and 20 years.—Mr. WHEATLEY replied: Figures are only available for the first three months of 1923. During that period 6·4 per cent. of the total number of patients attending the treatment centres for venereal diseases for the first time and found to be suffering from these diseases were under 18 years of age, and 7·8 per cent. were under 19 years of age. Figures are not available as regards the number of patients under 20 years of age.

Extension of Insurance Medical Benefit.

Mr. PALMER asked the Minister of Health if he would consider the need for medical benefit to be extended to members of approved societies whose service conditions entitled them to a pension at the age of 60 years, and thereby took them out of employment and the provisions of the National Health Insurance Act.—Mr. WHEATLEY replied: The hon. Member's suggestion would require legislation, and the matter is one which will, no doubt, be considered by the Royal Commission.

THURSDAY, MARCH 27TH.

Re-assessment by Medical Boards.

Lieut.-Colonel ASSHETON POWNALL asked the Minister of Pensions the result of the medical boards held for purposes of re-assessment during the last six months of 1923, showing the percentage of pensions increased, decreased, and unchanged, and the net result.—Mr. F. V. ROBERTS replied: During the period referred to 190,000 cases came up for medical re-examination by boards. As a result of this review, in 55 per cent. of the cases pension was renewed at the previous rate; in 21 per cent. of the cases the pension rate was increased; and in 24 per cent. it was reduced. The net result of these changes was a net increase of 0·6 per cent. in the average rate of disablement.

Mental Patients in Prisons.

Major Sir ARCHIBALD SINCLAIR asked the Home Secretary whether his attention had been called to the statement in the report of the Prison Commissioners for the year ending March 31st, 1923, with regard to the presence in prison of a class of prisoners who, on account of mental retardation or mental instability, or both, are incapable of profiting by training and discipline, and to a statement by the Commissioners that there was a need for a special form of curative treatment under a specially trained staff in an environment other than that of a prison for these persons; and whether he proposed to take any steps to give effect to this recommendation.—Mr. HENDERSON replied: A scheme is now being prepared by the Commissioners to collect unstable mental cases, not certifiable under the Lunacy or Mental Deficiency Acts, and sentenced to imprisonment long enough to justify transfer, in certain selected centres and to place them under the tuition of a specially trained staff and close medical observation.

Child Assault Cases.

Lieut.-Colonel RUDKIN asked the Home Secretary whether his attention had been called to the increasingly numerous cases of child assault; and whether he would consider the advisability of appointing a committee, including medical and legal experts, to inquire into these matters and the ratio of convictions obtained in the cases known to the police, the best means of preventing these offences and of dealing with the offenders, and as to the adequacy of the provisions made to protect children and the provision made for the

unfortunate victims.—Mr. HENDERSON replied: Yes, Sir, as indicated in my reply on March 6th, a conference has been held at the Home Office when this matter was fully discussed. I am now considering the appointment of a suitable committee for investigation and report. I may add that there is no evidence of any increase in the number of these offences over a period of 25 years.

Tuberculous Persons in Milk Trade.

Mr. JOHN HARRIS asked the Minister of Health whether he would consider the desirability of obtaining powers for local authorities administering tuberculosis regulations to take steps to prevent persons suffering from infectious tuberculosis from dealing directly with the distribution and sale of milk.—Mr. WHEATLEY replied: Yes, Sir.

Special Hospitals for Early Mental Cases.

Mr. COSTELLO asked the Minister of Health whether, with a view to providing facilities for the recovery of early mental cases which could not be proved to be dangerous or unfit to be at large, he would take steps to enable and encourage, by means of national grants, the establishment of appropriate hospitals under the management of the health committees, as distinct from the asylums committees, of local authorities.—Mr. WHEATLEY replied: The point raised by the hon. Member will receive the consideration of the Government.

Expenditure of the General Nursing Council.

Mr. HERBERT MORRISON asked the Minister of Health whether he had received from the National Asylum Workers' Union a resolution protesting against the expenditure of the General Nursing Council and asking that the fees charged by the Council should be reduced; and what action he proposed to take in the matter.—Mr. WHEATLEY replied: The resolution to which the hon. Member refers cannot be traced, but I am not prepared to express any opinion on this question until I have received definite proposals from the General Nursing Council as to the scale of registration and examination fees necessary, in their opinion, to make the Council self-supporting.

Lunacy Certification.

Mr. RAWLINSON asked the Prime Minister whether his attention had been called to the fact that, in the process of certification of an alleged lunatic as ordinarily conducted, the magistrate only heard evidence against the sanity of the individual; and whether he would bring in legislation enabling the alleged lunatic to have the opportunity, if he desired it, of having his case placed before the magistrate by his legal adviser, who should be entitled to test the adverse evidence by cross-examination and, if necessary, to call rebutting evidence.—Mr. MACDONALD replied: The points raised will no doubt be considered by any Commission that may be appointed to inquire into the Lunacy Laws, and I cannot give any undertaking to introduce legislation in anticipation of such an inquiry.

MONDAY, MARCH 31ST.

Panel Practitioners' Fees.

Mr. WHEATLEY, the Minister of Health, in moving the second reading of the National Health Insurance (Cost of Medical Benefit) Bill, said that the object of the Bill was to provide money to meet the balance of the cost of medical benefit and administration beyond the sum provided for by Section 7 of the Act of 1920. Under that Act the Minister of Health was empowered only to authorise the payment to the doctors of about 7*s.* 3*d.* per head per annum of the insured persons. The Court of Inquiry reported in January in favour of 9*s.* per head, and the Bill provided for the payment of this amount. By the arrangement which he had come to with the approved societies the money was to be found without any grant being required from the Exchequer and without any of the accrued surpluses of the approved societies which were available for additional benefits being earmarked for this purpose. The Bill was for three years. It was hoped that within that time the Royal Commission which he proposed to set up would have reported, and that legislative effect would have been given to its recommendations. The total amount required to tide over the three years, including the statutory allowance of two-ninths from the Treasury, was £1,762,000. The sum to be found for England, Scotland, and Wales respectively varied somewhat because of the differences in the cost of administration in the three countries. The sum required for England was 2*s.* 4¼*d.* per head per annum. It was proposed to obtain the money from three sources—first, 2*d.* out of the funds of the approved societies, which they offered because they felt that they were entitled to pay something for the services of regional medical officers who acted as referees, and for the keeping of a central index of insured persons. In order to strengthen the Central Fund for the immediate purpose of the Bill it was proposed to make a special grant of £100,000 from the reserve and to make it from the unclaimed stamps account. The Central Fund being thus further strengthened would be in a position to give them 1*s.* 8½*d.* per head per annum without impairing its efficiency for its main purpose. The approved societies had always large sums of money in the hands of the National Loan Commissioners, held under a guaranteed rate of interest. If the Commissioners obtained more than 4½ per cent., then the excess was credited to a reserve account that went to the benefit of the society. The fund at the moment was in a position to give them 6*d.* per head per annum for the next three years, and the societies had agreed that that should be taken. Clause 2 provided for the transfer of the £100,000 to the Central Fund. Clause 3 re-enacted the provision in the Act of 1922, which enabled societies to provide benefits to members who would otherwise not receive benefits because of prolonged unemployment. Clause 4 extended the Act to Northern Ireland, and Clause 5 applied it to Scotland and Wales. Clause 4 made the Act retrospective to Jan. 1st of this year. The Bill was one on which there was general agreement among all parties concerned.

In the discussion which followed Sir KINGSLEY WOOD said he regretted that the Government had not been able to announce the terms of reference to the Royal Commission. It was very important that those terms should be full and ample enough to cover every phase of national insurance to-day. While he believed that the great majority of the medical profession were endeavouring loyally to carry out their contracts, that could not be said of every one of them. He was very glad an important alteration had been made, and that every person who wanted to change his panel doctor could do so immediately by simply taking his card to another doctor on the panel. They would not get an efficient medical service and proper value for the money now being paid while they retained the large panel lists. The present number of 2500 persons on one doctor's panel was far too many.

Dr. CHAPPLE contended that if they introduced into the approved societies a wealthy class of member they would make a greater demand on the practitioner, and that was why the practitioners, who were at one time content with a lesser sum, now found that 9*s.* was not enough.

Lieut.-Colonel FREMANTLE, in supporting the second reading, pointed out that the medical profession had not made any undue demand in the terms for which they had stood out. Dealing with the suggestion that the right of the patient to change his panel practitioner was due to the demand of the approved societies, he said that the demand came not from the societies but from the Insurance Acts Committee of the British Medical Association. The latter body had always been keen on absolute freedom of choice both by practitioners and by patients. It was to the committee's credit that they should have demanded this freedom, and he was glad it had been granted. They had also demanded the Commission, and they recognised it was part of a larger series of questions. As to pledges, he said that the one demanded of him by the approved societies was absolutely unjustified. He was not in a position to give the pledge, because he was not in a position to judge of the questions at the time. But the societies demanded the pledges in such a manner that many candidates might well have been afraid to refuse. He was able to refuse, and, as a result, his majority at the election was increased.

The second reading was agreed to without a division.

TUESDAY, APRIL 1ST.

Imported Chilled Meat.

Viscount CURZON asked the President of the Board of Trade if he would state what quantity of chilled meat, acted upon by formaldehyde as a preservative, was being imported into this country by the s.s. *Kent*, or any other ship; if the medical officer of health at the port where this experimental consignment arrives was satisfied that the meat thus preserved with formaldehyde was fit for human consumption; was the meat on this pronouncement to be placed on the market; and what would be the functions in this matter of the departmental committee which was now sitting.—Mr. WHEATLEY, who replied, said: I am informed that the quantity of chilled meat being imported in the s.s. *Kent* is 463 quarters, and I am not aware that any arrangements have been made for further consignments of meat treated by formaldehyde. If the port medical officer of health is satisfied after examination of the consignment that the meat is fit for human consumption it will, no doubt, be placed on the market in the usual way. I understand that the departmental committee on preservatives in food propose to arrange for the inspection of the meat and investigation of the process for the general purposes of their inquiry.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, April 8th.

THERAPEUTICS AND PHARMACOLOGY: at 4.30 P.M.
Annual General Meeting:
Election of Officers and Council for 1924–25.
Papers:
Dr. Symes-Thompson: The Occurrence of Symptoms following the Simultaneous Use of Adrenaline and Cocaine.
Dr. P. Hamill: The Use of Atropine in Conjunction with Digitalis.
Dr. E. Cowles Andrus: The Clinical Administration of Digitalis in the Form of Powdered Leaf.

Thursday, April 10th.

SPECIAL MEETING OF FELLOWS: at 5 P.M.
To meet the Foreign Medical Officers of Health now in this country, and to receive a communication from Dr. Rajchman (Director of the Health Section of the League of Nations) on the Health Organisation of the League.
A preliminary address will be given by The Right Hon. John Wheatley, M.P., Minister of Health.
Tea and coffee will be served at 4.30 P.M.

NEUROLOGY: at 8.30 P.M.
Discussion:
On the Value of X Rays in the Localisation of Cerebral and Spinal Tumours, with Special Reference to Ventriculography and Lipiodol Injections, to be opened by Mr. Percy Sargent and Mr. Geoffrey Jefferson.

Friday, April 11th.

CLINICAL: at 5.30 P.M. (Cases at 5 P.M.)
Cases:
Dr. Hildred Carlill: (1) Pathological Laughter in a Woman of 66 with High Blood Pressure; (2) Lightning Pains of Tabes Dorsalis persisting in (inter alia) a Limb which was Amputated in 1910.
Dr. Douglas Firth: Juvenile Myxœdema.
Other cases will be shown.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.
TUESDAY, April 8th.—5 P.M., Dr. Thomas McCrae: Clinical Features of Foreign Bodies in the Bronchi. (Second Lumleian Lecture.)
THURSDAY.—5 P.M. (Last Lumleian Lecture.)

SOCIETY FOR THE STUDY OF INEBRIETY, 11, Chandos-street, London, W.
TUESDAY, April 8th.—4 P.M., Dr. Bedford Pierce opens a discussion on Mental States in Alcoholism.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, April 7th.—10 A.M., Surgical Registrar: Surgical Pathology. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Mr. Simmonds: Surgical Out-patients.
TUESDAY.—10 A.M., Dr. Drummond Robinson: Gynæcological Operations. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Owen: Skin Department. 2.30 P.M., Mr. Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
FRIDAY.—11 A.M., Dr. McDougal: Electrical Department. 12 noon, Mr. Endean: Venereal Diseases. 2 P.M., Mr. Banks-Davis: Throat, Nose, and Ear Department.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily 10 A.M. to 6 P.M., Saturdays, 10 A.M., to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE. (Prince of Wales's General Hospital.) (At 4.30 P.M.)
MONDAY, April 7th.—Dr. S. Cochrane Shanks: X Ray Appearances of Tumours of Bones.
TUESDAY.—Dr. F. G. Crookshank: Thyroidal Deficiencies.
WEDNESDAY.—Mr. Norman B. B. Fleming: Iritis.
THURSDAY.—Mr. H. W. Carson: Diagnosis of Cancer of the Rectum.
FRIDAY.—Dr. L. R. Yealland: Clinical Demonstration of Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond-st., W.C.
THURSDAY, April 10th.—4 P.M., Mr. Addison: Hæmaturia. Pyuria.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.
THURSDAY, April 10th.—5 P.M., Mr. Davies: Abortion.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.
TUESDAY, April 8th.—4.15 P.M., Dr. E. M. Brockbank: Thoracic Pain.

MANCHESTER BABIES' HOSPITAL POST-GRADUATE LECTURES.
FRIDAY, April 11th.—5.30 P.M., Dr. Chisholm: Complications met with in the Treatment of Marasmic Infants.

Vacancies.

For further information refer to the advertisement columns.

Bath, Royal Mineral Water Hospital.—P.
Bethlem Hospital, Lambeth-road, S.E.—Two Res. H.P.'s. Each £25 per quarter.
Birmingham, St. Chad's Hospital.—Res. M.O. £100.
Bournemouth, Royal Victoria and West Hants Hospital.—Asst. Hon. Bacteriologist, &c.
British Guiana Diamond Fields.—Government M.O. £500.
Charing Cross Hospital, W.C.—Med. Reg. and Surg. Reg. Each £150. Also Asst. Surg.
Derbyshire Royal Infirmary, Derby.—H.S., &c. Also Asst. H.S., &c. Each £200.
Dublin University, Trinity College.—Prof. of Pathology. £800.
East London Hospital for Children, &c., Shadwell, E.—H.P. £125. Also Afternoon Cas. O. £120.
Gold Coast, Takoradi Harbour Construction Works.—M.O. £1000.
Herefordshire General Hospital.—H.P. £200.
Hospital for Consumption and Diseases of the Chest, S.W.—H.P. £50.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—H.P. £100. Also Asst. P.
Kensington, Fulham, and Chelsea Hospital, Richmond-road, Earl's Court, S.W.—Sen. and Jun. Res. M.O.'s. £100 and £75 respectively.
Leeds University, Dept. of Pathology and Bacteriology.—Lecturer in Pathology. £500.
Manchester, Baguley Sanatorium.—Third Asst. M.O. £400.
Manchester, Royal Manchester Children's Hospital.—Asst. M.O. £150.
Metropolitan Hospital, Kingsland-road, E.—Sen. H.P., H.S., Jun. H.P., H.S., and Two Cas. O.'s. Each £100. Hon. Anæsthetist.
Middlesex Hospital Medical School, W.—Asst. to Prof. of Experimental Path. £350.
Northampton General Hospital.—Hon. P.
Pontefract, General Infirmary and Dispensary.—Res. Surg. O. £400.
Rainhill, County Mental Hospital.—Asst. M.O. £300.
Royal College of Surgeons of England.—Examiners.
Royal Northern Hospital, Holloway, N.—H.P. and H.S. £75.
Somerset Mental Hospital, Wells.—Asst. M.O. £300.
Southampton Free Eye Hospital.—Locum Tenens Ophth. H.S.
Stafford, Colon Hill Mental Hospital.—Med. Supt. £600.
Throat Hospital, Golden-square, W.—Hon. Surg. Reg.
Tunbridge Wells General Hospital.—H.S. £160.
Union of South Africa Government Mental Hospital Service.—Asst. P.'s. £460.
West End Hospital for Nervous Diseases, 73, Welbeck-street, W.—Cas. P. £200.
West London Hospital, Hammersmith-road, W.—Hon. Med. Reg.
Willesden General Hospital, Harlesden-road, N.W.—H.S. £100.
The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Kidwelly, Carmarthen; Levenwick, Shetland; Scalloway, Shetland.

Births, Marriages, and Deaths.

BIRTHS.

COOPE.—On March 26th, to Rosalind, the wife of Robert Coope, M.D., M.R.C.P., of 28, Rodney-street, Liverpool, a daughter.

MARRIAGES.

LANGWILL—JUDD.—On March 22nd, at the Church of St. Martin-in-the-Fields, Archibald Langwill, M.D., F.R.C.S.E., to Marguerite Ethel, elder daughter of Henry Kerridge Judd, of Edgware.

DEATHS.

CLAREMONT.—On March 27th, of typhoid and broncho-pneumonia, Ethelberta Claremont, M.B., M.S. Lond., F.R.C.S. Eng., aged 31.
ECCLES.—On March 24th, at "Nafferton," Broadhurst-gardens, Hampstead, Dr. Charles Henry Eccles, aged 58 years.
JOHNSTON.—On March 25th, at Princes-square, W., James Johnston, M.D., F.R.C.S. Edin., formerly of Shanghai, in his 86th year.
MACBRIDE.—On March 18th, at 74, Rodney-street, Liverpool, Mary Monica MacBride, Sister on the Staff of the Royal Infirmary, Liverpool, from 1880 to 1905, aged 69 years.
MACCULLOCH.—On March 26th, at The Bury, Branksome Park, Bournemouth, William Mansell MacCulloch, M.D. Edin., at one time Jurat of the Court of Guernsey, aged 75.
TAYLOR.—On March 29th, at Weoley-hill, Birmingham, E. Claude Taylor, M.D., M.S., F.R.C.S., formerly of Hampstead, aged 53.
WILLIAMS.—On March 24th, at Bronheulog, Burry Port, Owen Williams, J.P., L.R.C.P., L.R.C.S., aged 70.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

CANADA'S LITTLE BLUE BOOKS.

"The Canadian Mother's Book" was first published in 1921, and offered free to any mother who cared to apply for it. By 1923 more than 220,000 copies had been supplied, largely in response to individual requests. The mothers themselves christened the pamphlet "the little blue book," and, encouraged by the eager demand for it, the Canadian Department of Health proceeded to issue other little blue books. There are now three different groups—the Mother's Series, the Home Series, and the Household Series—each containing five pamphlets. The whole 15 are the work of Dr. Helen MacMurchy, chief of the Division of Child Welfare: and anybody who has been tempted to feel that all there is to say about child welfare has already been said will thank the author for her freshness and vitality both of thought and expression.

The first series is perhaps the most generally useful, since the fundamental needs of mothers, fathers, and children are much the same in all countries. Dr. MacMurchy sets a high standard, and believes the best of her average family, assuming as a matter of course that each member will be anxious to take his or her share in the home-making as soon as it is understood. She utters wise warning against what is perhaps the commonest mistake of an unselfish mother—allowing herself to become a perfect drudge, and spoiling the family at the same time.

"Teach your children to help you and to help themselves. Don't do anything for them that they can do for themselves.

The division of labour is a great principle in the home. 'Company manners' are the worst manners in the world. Good home manners are the only kind worth having—they never wear out."

Dr. MacMurchy sets great store upon the mother's preservation of her individuality, her tastes and interests, and advises her, at all costs, to arrange things so that she does not work the whole of any day. Only in this way can she possess herself, and preserve the spirit of serenity which goes so far to produce a happy home.

When Dr. MacMurchy refers directly to questions of children's health, her remarks are precise and very much to the point. For example:

Sore eyes in a little baby are very dangerous. Get the doctor this minute.

It is wrong to subject children at the formative period of life, when impressions are so deep and lasting, to the shock and pain of contact with mental illness.

Children can't hurry. Their reaction time is longer than ours. Parents and teachers who talk about "instant obedience," please take notice. Instant obedience in you is about ten times faster than in a child.

While endorsing what is said about the high value of milk as a food for children, the injunction that *all* milk should be pasteurised would be regarded here as a little sweeping. It is useful to be reminded once again that milk is a solid food about one minute after it has been swallowed, so that it should be taken slowly.

There are many excellent hints in the Home Series and Household Series, including advice as to such matters as posture and avoidance of unnecessary fatigue, but these pamphlets are of rather less universal application than those in the Mother's Series. In reading them an impression is received of wide spaces, open-air conditions, and a general atmosphere of elbow-room, which is unfortunately far from familiar to poorer housewives in this country. An agreeable sense of surprise is also conveyed by the long list of Government departments and voluntary agencies to which the mother is invited to write for any help or advice she may require, being assured of their pleasure in hearing from her and their desire to be of service.

"RECOMMENDED BY THE PORTER."

THE ideal head-porter at the large hotel is presumed by the public to be able as well as willing to supply information to the visitor on any topic under the sun. And there must be few of us who have not cause to remember with gratitude the practical help which we have received from these energetic and adaptable polyglots. But while the advice is valuable on such subjects as the selection of suitable shops for our purchases, and of suitable routes for our future journeys, as on passport and currency difficulties, the head-porter's opinion on the relative merits of the available medical practitioners has to be received with caution. The traveller should hesitate, we feel, to accept the porter's recommendation of a medical man in preference to the hotel doctor. The latter practitioner has been chosen by the management for good reasons, in which the reputation of the establishment plays its part; the selection of the porter may have a different bias. But the situation is not always as simple as this. A complaint reaches us, for example, from a hotel doctor in Bombay, stating that a notice had been placed in a telephone box of the hotel giving detailed information as to where another medical practitioner was to be found at various times of the day. Our correspondent comments unfavourably on the professional position displayed, because he believes that the medical man in question either is prevented or should be prevented by his official position from competition in private practice. That is a matter which could easily be settled, we suppose, by submitting a question to the proper authority, but it is clear that this is not a case of "Recommended by the porter." The hotel management has the control of its own telephone boxes, and must have sanctioned or approved the appearance of the notices.

"MOTHERCRAFT."

WE have received from the National League for Health Maternity and Child Welfare (Carnegie House, 117, Piccadilly, London, W. 1) a copy of the fourth edition of a popular manual on "Mothercraft." This is a selection from courses of lectures on infant care, delivered under the auspices of the National Association for the Prevention of Infant Mortality. The book has been revised, new chapters having been added on the Nervous Child by Sir Maurice Craig, the Backward Child by Dr. A. F. Tredgold, and Diseases of the Skin in Infancy by Dr. H. G. Adamson. More than 30 separate subjects are dealt with by acknowledged experts, and the book justifies its claim to be a complete and up-to-date work of reference on all that relates to the care of infants and children under five. The price has been reduced from 5*s.* 6*d.* to 4*s.* 6*d.*, post free.

HOSPITALS AND DISPENSARIES IN BURMA.

DURING the year 1921 the number of patients treated in the 278 hospitals and dispensaries in Burma amounted to 1,885,944, of which 79,858 were in-patients; the daily average of the latter under treatment being 3445. The very great increase in the beneficent work of these institutions is shown by comparison with the figures for 1900, when the total treated numbered 858,689, of whom 36,095 were in-patients. For the province as a whole malaria and its results furnished the largest number of patients (12,761 indoor and 256,776 outdoor); after this, diseases of the eye (1742 indoor and 118,839 outdoor). Venereal diseases caused 7252 admissions to hospital, and in addition 44,792 outdoor patients were treated. Of those admitted to hospital, 4913 were suffering from syphilis, 51 cases terminating fatally; among the 1608 cases of gonorrhœa or its results (rheumatism, ophthalmia, &c.) 18 deaths occurred; in a third category of "diseases of venereal origin—non-infective, i.e., non-syphilitic venereal sore, inflammation of lymphatic glands, salpingitis, pelvic abscess," are included 731 cases, with 8 deaths. The total operations performed numbered 57,181, an increase of 954 on the year preceding. Several new hospitals have been opened, or are under construction, but it is stated that "most of the hospitals throughout the province are of wood, unsuitable, out of date, and many of them in indifferent repair." The report is prefaced by a very interesting résumé of the progress and development of hospital construction in Burma, by Mr. W. B. Brander, Secretary to the Government. The first hospital was established at Akyab in 1826; the first separate report on the hospitals and dispensaries in the province related to the year 1865–66, when there were 13 institutions at work, treating in all 2985 indoor and 19,804 outdoor patients. Sir Reginald Cradock, Lieutenant Governor of Burma, in a Government resolution, records his "sincere appreciation of the services which Lieut.-Colonel Entrican has rendered to the cause of medical science in this province," and "believes that whatever the future may bring forth, the people of Burma have now too high an appreciation of the value of the methods of Western medicine to discard them for the empirical methods and antiquated ideas of systems not based on accurate scientific knowledge."

There are two lunatic asylums in Burma, one at Rangoon, accommodating 632 patients, and the other at Minbu, on the Irrawaddy near the southern border of Upper Burma. In both asylums there was overcrowding during 1921; at Rangoon the daily average inmates numbered 753, the accommodation being planned for 632; and at Minbu the space allowed for each inmate was only 36 square feet. The admissions numbered 209, and in addition there were 21 observation cases; the total number, 230, being a slight increase on the corresponding figure (220) for the previous year. The discharges numbered 138, of whom 87 were "cured." In regard to the general health of the inmates, the report does not enter into particulars; the death-rate was 7·74 per cent. of the average strength, a slight increase on the previous year (6·77 per cent.); at Minbu there were no deaths. Tuberculosis accounted for 21 deaths out of the total 69. As to causation of insanity among the inmates, Colonel Entrican remarks on "the continued increase of cases attributed to drugs, from 23 in 1920 to 33 in 1921." For several years past this increase has been going on steadily.